A STUDY OF THE EFFECTS OF A REQUIRED STUDY SKILLS PROGRAM UPON ACADEMIC ACHIEVEMENT IN THE FIRST YEAR OF UNIVERSITY

BERNARD PAUL WILSON

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"A STUDY OF THE EFFECTS OF A REQUIRED STUDY SKILLS PROGRAM UPON ACADEMIC ACHIEVEMENT IN THE FIRST YEAR OF UNIVERSITY"

by

Bernard Paul Wilson

A Thesis

submitted to the Faculty of Education

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The undersigned certify that they have read, and do recommend for acceptance, a thesis entitled "A Study of the Effects of a Required Study Skills Program Upon Academic Achievement in the First Year of University" submitted by Bernard Paul Wilson, B.A., B.Ed., in partial fulfillment of the requirements for the degree of Master of Education.

Supervisor

Date

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ABSTRACT

This study employed 180 randomly sampled first year students, 91 in a Control condition and 89 in an Experimental condition. Students in the Experimental condition were required to complete a Study Skills course during their first semester. At the end of the first semester both groups were compared on measures of academic performance and study habits and attitudes. At the end of the second semester, both groups were compared on measures of academic performance. Students in the Experimental condition were exposed to the Study Skills program of Dr. F.J. Vattano during their regular English course. Students were grouped into high and medium risk categories by means of their Grade XI English average. All students completed the Brown-Holtzman Survey of Study Skills and Attitudes (Form C) at the end of their first semesters. The raw scores collected were examined by the use of the SPSS and NYMBUL programs to provide an analysis of covariance of group means. Two runs were performed to provide an analysis of covariance with one covariate (Grade XI average) and with two covariates (Grade XI average and first semester average). Analysis was performed for the high risk groups, the medium risk groups and the combined risk groups. It was hypothesized that no significant differences would be found between Control and Experimental groups at all levels on the outcome measures used. These null hypotheses were accepted as the

analysis of the data revealed no significant differences. The Study Skills program used was assessed by the students in the Experimental condition. While the results of this assessment indicated that on the whole the information presented in the program was favourably received, it was noted that some students expressed disapproval of the methods of presentation used. The study was undertaken to investigate the possible use of the Study Skills program as a required course for first year high risk students. It was recommended that this program not be implemented but that other methods of meeting the academic support needs of these students be investigated.

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CHAPTER I

I. INTRODUCTION

This study was undertaken to investigate the effects of the use of one possible form of intervention in the area of academic support, with the primary purpose of attempting to improve the academic performance of selected students by exposure to Study Skills Programming. At the time this study was undertaken the admittance policy of Memorial University of Newfoundland allowed the acceptance of students whose previous academic performance in high school indicated that they would face considerable difficulty in maintaining an acceptable level of performance. While it had been recognized by the Vice-President for Student Affairs, and more generally by the Junior Division instructors, that many such students entering the University needed some form of academic support, it was felt that this need was not being met by existing structures. The introduction of the Junior Division in 1969 itself was based in part on the premise that many students entering their first year of university study need academic support and that until that time this support had not been adequately provided. In his report, Dr. J.J. Sharp (1974) noted that,

> One of the primary reasons for the introduction of Junior Division was to provide a learning situation which would assist students, who were generally poorly prepared, to adjust to the rigors of university study.

Junior Division provided foundation courses in selected subjects. Foundation courses were provided in English, Mathematics, Biology, Chemistry and Physics for those students whose academic background in those subjects was weak, or for those students who had no previous experience

in the subject. While these foundation courses met the needs of specific subjects, they did not meet the more general need of fostering a successful academic adjustment to the demands of university study. In a 1973 report Dr. A.M. Sullivan noted that,

> It seems, however, that some students are generally weak, not only in specific academic skills, but also in general academic abilities. We are also in the process of planning a "General Arts Foundation Programme" which will emphasize reading and study skills, general problem solving and the development of general academic abilities for those students who intend to enter Arts or Education.

Commenting upon the need for effective study skills, P.D. Cristantiello and Cribbin (1956) stated that,

> Study skills are well nigh as important for success in college as is the ability to pay for one's tuition. A deficiency in study skills sentences the student either to undue hardship in making necessary academic adjustment or to outright failure. (p. 35)

Memorial University has for a number of years offered a study skills course and a speed reading/comprehension course to its students under the auspices of the Counselling Centre. While these courses were judged to be effective by those offering them, they had attracted only a very small percentage of the total student enrollment. Dr. J.M. Hedegard (1972) in a report to the faculty and administration noted that,

> A large majority of students (70%) felt their own poor study habits were a major source of difficulty. A majority said they would like specific help in study skills, effective reading and the ability to present ideas in papers. The first two services are available at the Counselling Centre, but apparently many students who want them don't get there. (p. 8)

It was considered that a required course in study skills for most freshman students might meet the need of fostering successful academic adjustment to the demands of university study. However, it was recognized that any attempt at a more widespread introduction of a study skills course, while perhaps desirable, would face many drawbacks. Commenting upon these drawbacks, Neidt (1967) cited the following commonly stated limitations: the shortage of teaching personnel, the demands of subject-matter areas, the difficulty of providing consistently high caliber presentations and problems of scheduling. Tresselt (1952), in a survey of thirty colleges and universities in the United States offering study skills courses, found that the average instructor had a masters degree, with some credit towards a doctorate, that instructors do not stay with the course for a long period of time, that the median number of students per section was twenty, and that the usual format was lecture supplemented by discussion and individual interviews. He suggested that the study skills course is not an expensive one in terms of personnel or time, especially if it can justify its existence by helping students in a recognizable way. In view of present financial stringency at Memorial, if not all universities, this suggestion may be questioned. Undoubtedly, teaching the course to a very small percentage of the student enrollment may not be very expensive in terms of personnel and time; however, requiring the completion of a study skills course by all first year students would involve a substantial input in both personnel and time if traditional lecture methods were used.

The possibility of using non-traditional methods has been explored by Charles O. Neidt (1967). Using a video taped study skills program devised by Dr. F.J. Vattano at Colorado State University, he found that the student reaction to the tapes was favorable, that the program met the needs of the students, and that the grade point average of those enrolled was significantly higher than that of the population as a whole.

Blake (1955) noted that eleven percent of the universities in the United States required completion of a study skills course by all freshmen, but no comments upon the effectiveness of such courses were made except to state that all respondents, including those requiring a study skills course for all freshmen, reported favorable results.

In further research, W.S. Blake, Jr. (1956) studied the effects of requiring students who did not meet the usual entrance requirements of the University of Maryland to complete a study skills program. In summary he noted that,

> It seems evident that the students who were assigned to a probationary status, and were required to participate in the University of Maryland study skills program, were benefitted academically. (p. 93)

An examination of the study habits of failing and successful students at a two year college was undertaken by C.W. Brown (1941). He noted that neither group demonstrated an extensive knowledge of good study skills and that from 25 to 50 percent reported using study methods that could be considered psychologically unsound. The percentages reporting the use of correct study skills tended to fall between 25 and 75 percent. His concluding statements were,

> 1. In general the percentage of failing students reporting the use of correct study habits was as large as the percentages found among successful students.
>
> 2. In none of the larger phases of study methods investigated was the percentage of failing students using correct habits significantly below the percentage of successful students.
>
> 3. Large percentages of both failing and successful students fail to make use of many efficient study techniques.
>
> (p. 208)

Based on the low percentage of students reporting correct study habits he suggested that many failing students and successful students could improve their scholarship by improving their study habits.

The literature suggests, then, that most research on study skills programs reports academic gains from slight to substantial amounts (Entwisle 1960); that there is some indication that both successful and failing college students do not have an extensive knowledge of correct study habits (Brown 1941); that required study skills courses can be successful in improving academic performance of those required to take them (Blake 1955, 1956); that non-traditional methods of instruction in study skills can meet the needs of students (Neidt 1967); and that study skills courses are offered extensively (Entwisle 1960, Hayward 1971, and Tresselt 1952).

The nature of the problem at Memorial

In a 1969 report of the principles for the development of the Junior Division, Dr. A.M. Sullivan stressed that,

> The most important factor in success in university is hard and efficient study... All students, in the first term, should be offered courses in study habits and reading proficiency, as well as vocational and personal counselling.' (p. 3)

In a report to the Vice-President Academic on those first year students who failed out or were placed on condition following the Christmas examinations in 1972, Dr. A.M. Sullivan (1973) noted that an extremely high proportion of those who had failed out or were placed on conditional status had a previous academic record that was poor or mediocre.

TABLE I

EXAMINATION OF GRADE XI AVERAGE FOR ALL STUDENTS, FAILING STUDENTS AND CONDITIONAL STUDENTS, DECEMBER 1972

	All Students	Failing Students				Conditional Students	
Grade XI Average	Grade XI	During Semester Average: 0		End of Semester Average: 1-44		Average: 45-54	
	N	n	% of N	n	% of N	n	% of N
85+	111	1	.9	0	-	1	.9
80-84	162	2	1.2	1	.6	2	1.2
75-79	314	4	1.2	4	1.2	5	1.5
70-74	356	7	1.9	9	2.5	13	3.6
65-69	363	7	1.9	19	5.2	27	7.4
60-64	273	20	7.3	23	8.4	67	24.5
TOTAL	1,579	41		56		115	
Overall Average	69.0%	67.4%		66.3%		64.0%	
% above 75.0	37.3%	16.9%		8.8%		6.8%	

The above table which was included in that report shows that of those students who failed out at the end of the semester only 8.8 percent had a Grade XI average above 75 percent. Those who left university during the semester were given a final average of zero, and while the trend holds true, this is a complex group as many may have left for other than academic reasons.

In an earlier report to the President of the university, Dr. A.M. Sullivan (1966) had made similar comments,

> With particular reference to performance in Grade XI, it appears that an extremely high percentage of those who fail in the Christmas examinations have an average mark of 70 or below in Grade XI examinations. It also appears that an extremely high percentage of students who do well in the Christmas examinations have an average Grade XI mark of 80 or above. (p. 17)
>
> Students who obtain a high score on the Study Habits Inventory tend to achieve a high level of performance in university. This finding remains true even when performance in Grade XI was held constant. (p. 18)

The finding that good study habits tended to produce a higher academic performance when Grade XI average was held constant, suggested that improving the study habits of students may result in an increase in academic achievement. It also appeared that students with a Grade XI average above 75 percent rarely faced academic difficulty, while those below this average ran a much higher risk. The cut-off point of 75 percent has been used consistently at Memorial to excuse students from required foundation courses, the rationale being that students with an average above this are adequately prepared for

university study, while those below may need special help.

Special help had been forthcoming in the form of foundation courses for weakness in specific courses, and in the form of academic advisors, and academic support programs offered under the auspices of the Counselling Centre.

Dr. J.M. Hedegard (1972) noted that difficulty in learning regular study habits was one of the major problems reported by a majority of the first year students. A more wide-spread offering of a study skills course was contemplated but drawbacks were noted. In order to reach those students who needed academic support it was thought desirable to include as many students as possible whose Grade XI average was below 75 percent. It was thought that this would be most easily achieved by requiring those students to complete a study skills course as part of their Junior Division program. There were limitations with respect to the overall cost of such a program. Under the financial restraints placed upon the university it was unlikely that the number of faculty required to teach such a course could be hired if traditional methods of instruction were used. Ideally, the format would be small groups of students given necessary instruction supplemented with individual counselling. However, as this would involve the employment of a large number of trained personnel, this approach was not attempted.

The approach used by Dr. F.J. Vattano of Colorado State University was examined. This program used video-taped instruction in the teaching of study skills. The program has been favorable evaluated by

C.O. Neidt (1967), and it was decided that this program could be implemented without a heavy input in terms of personnel, thus meeting one of the requirements of introduction of a required study skills course. However, it was decided that as the evaluation undertaken by Neidt had employed voluntary subjects and as motivation is recognized as an important variable, then a study should be conducted to investigate the probable outcomes of using this program as a required course. The present study was undertaken in an attempt to provide the necessary information.

Lack of and need for research

Much has been written about the various forms of academic support, and some research has been conducted, but as Entwisle (1960) pointed out, much of the research lacks adequate control procedures and most of the studies dealt only with voluntary participants who generally were not representative of the student population. She found that,

> One study selected an experimental group that was a stratified sample of the student population, but even here the fact that all students taking the course were volunteers makes generalization to the rest of the student population tenuous. (p. 248)

She also suggested that the desire to enroll in a study skills course may be an indispensable factor for achieving any large improvement. She found that of the twenty-two studies, only eleven controlled for a motivational factor, and of these seven did so by using students excused from a required course as control groups.

Required courses normally contain only those students who are academically high-risk or are on academic probation; the study of W.S. Blake, Jr. (1956) is representative of this category. The study involved some 128 students who were admitted to the University of Maryland and who did not meet normal entrance requirements. A control group of 122 students was used but the academic standing of this group was not specified, although it would appear that they were not probationary students. He noted that,

> ... it seems evident that the students who were assigned to a probationary status, and were required to participate in the University of Maryland study skills program, were benefitted academically...in view of the findings reviewed here it appears that the compulsory training given students does help many achieve their immediate goals despite the stigmatization suffered in varying degrees by students when first placed on probation (p. 93)

Speaking more generally, he noted that,

> Research is being done neither in the minimal quantity necessary nor in the areas where it is most needed. The quantity of research needed will necessarily be governed by the needs of individual programs; but every program needs research of the kind which will indicate whether the program is achieving set goals, and what needs to be done to improve the program. (p. 98-99)

Although these comments were made over twenty years ago, it appears that they are still relevant today. Considering the widespread offering of such courses as reported by Hayward (1971) and after reviewing the literature extensively, although certainly not exhaustively, it appeared that very little research had been reported, and that which had

been reported dealt with relatively small percentages of student populations who either volunteered for such courses or who were required because of poor academic performance to complete such a course. In either case extrapolation to the general student body is not warranted. The purpose of the study

This present study was in part undertaken to determine the possible academic outcomes of requiring most first year students to complete a study skills program. The study involved some one hundred and eighty first year students enrolled at Memorial University of Newfoundland, eighty-nine of whom were required to complete a study skills program during their first semester as part of their first year English course. Upon completion of the first and second semesters the grades of all these students were collected, as was their Grade XI average. Further, all the students completed the Brown-Holzman Survey of Study Habits and Attitudes (SSHA) at the end of their first semester.

This procedure permitted an evaluation of the immediate effects upon academic achievement in the semester during which the program was completed and a follow-up evaluation of the effects for the semester after completion of the program.

The purpose of the study was three fold:

1. To assess student reaction to the Study Skills Program of Dr. F. J. Vattano of Colorado State University produced in film format by Learning Inc.

2. To determine the effect of exposure to this program on the first and second semester grades, and scores on the Brown-Holzman Survey of Study Habits and Attitudes for those first year students required to take the course.

3. And based on the outcome of this study to make recommendations on the possible use of this program as a required course for first year students entering Memorial University of Newfoundland.

Definition of terms

Study Skills Program - Refers to a filmed series of ten units presenting information on the following in order of presentation,

1) Perspectives on Learning
2) Scheduling Your Time
3) The Study Environment
4) Learning Strategies
5) Learning: An Active Process
6) Learning and Reinforcement
7) Classroom Learning
8) Improving Your Reading Skills
9) How to Take Examinations
10) Where and When to Seek Counsel

The program was produced by Learning Inc. and the instructor was Dr. Frank J. Vattano, Associate Professor Psychology at Colorado State University. A more complete description can be found in Appendix C.

Grade Average Semester 1 (GAS1) - Refers to the average grade of the student expressed as a percentage after the first semester of study. This average is computed on the basis of grades reported for the four or five subjects taken.

Grade Average Semester 2 (GAS2) - Refers to the average grade of the student expressed as a percentage after the second semester of study. This average is computed on the basis of grades reported for the four or five subjects taken.

Grade Average Grade XI (GAXI) - Refers to the average grade of the student upon completion of Grade XI, expressed as a percentage. This average was based on those courses used to meet the entrance requirements to the Junior Division of Memorial University of Newfoundland. At the time of writing they were that:

> Candidates shall have passed the Grade XI Public Examinations in each of the following with an overall average mark of not less than 60%.
>
> (i) English
>
> (ii) Mathematics
>
> (iii) Three other subjects taken from those listed below so chosen that at least one is taken from each of Group A and B.

A	B	C
Classical Language	Biology	Art
Economics	Chemistry	Music
Geography (Academic)	Earth Science	
History	Physics	
Modern Language		

English 100F - Refers to the first year English course offered to those students whose previous background in English was judged by the English Department to be inadequate to complete the

regular English 1000 Course. At the time this study was undertaken this was determined by;

less than 65% in Grade XI English
and less than 75% overall Grade XI average.

English 1000 - Refers to the first year English course offered to those students whose previous background in English was judged by the English Department to be sufficient to complete the course. At the time this study was undertaken this was determined by;

Either 1) 65 - 74% in Grade XI English
Or 2) Less than 65% in Grade XI English but with an overall Grade XI average of 76% or better.

English 1050 - Refers to the first year English course offered to students whose previous background in English was judged by the English Department to be sufficiently strong to allow them to complete the course. At the time this study was undertaken this was determined by;

- 75% or better in Grade XI English.

First Year Student - Refers to a full-time student who at the time the study was undertaken was enrolled at Memorial in the first semester of study and who had not previously attended university. This excluded any students who had previous experience at any university and any who were in attendance as part-time students.

Full-Time Student - Refers to a student who was enrolled in four or more courses at the time the study was undertaken.

First Year - Refers to two semesters of study each of thirteen weeks duration, completed in the Junior Division of Memorial University of Newfoundland.

Hypotheses

It is hypothesized that,

1) The scores of the E100F experimental groups will not differ significantly from those of the C100F control groups on the following variables,

   (i) The first semester grade average - GAS1.

   (ii) The second semester grade average - GAS2.

   (iii) Brown-Holzman Survey of Study Habits and Attitudes Form C.

2) The scores of the E1000 experimental groups will not differ significantly from those of the C1000 control groups on the following variables,

   (i) The first semester grade average - GAS1.

   (ii) The second semester grade average - GAS2.

   (iii) Brown-Holzman Survey of Study Habits and Attitudes Form C.

3) The scores of the combined experimental groups will not differ significantly from those of the combined

control groups on the following variables,

(i) The first semester grade average - GAS1.

(ii) The second semester grade average - GAS2.

(iii) Brown-Holzman Survey of Study Habits and Attitudes Form C.

Summary

This chapter has attempted to introduce the nature of the problem specifically at Memorial University of Newfoundland and more generally as discussed in the literature. The lack of and need for research has been outlined, as was the purpose of the study. The chapter included a definition of terms to be used and the hypotheses to be tested.

Study skills courses are offered using many methods of presentation and combinations thereof. This study attempted primarily to examine the effectiveness of a filmed study skills program in raising the grade point average of those first year students required to complete the program. The outcome of the study was to be used in helping to judge the advisability of introducing such a program as a required course as a part of the first year program at Memorial.

CHAPTER II

REVIEW OF LITERATURE

The purpose of this chapter is to initially review the various approaches that have been used in academic support programming; the extent of the offering of study skills courses; the traditional format of such courses; an alternative format using videotaped instruction, and the criteria used in evaluation.

It has been noted that research in the area of study skills programming is not extensive, especially in view of the wide usage of such programming over a considerable number of years. Entwisle (1960), in a review of the literature noted that only a total of twenty-two evaluations which included detailed data were found. These twenty-two cover a 35 year period dating back to 1935.

Entwisle noted a noticeable lack of research in the area of college level required courses. She also noted that while the evaluations report uniformly positive results the finding should be tempered by the consideration that negative results are much less likely to be published. Cristantiello and Cribbin (1956) noted that only one college contacted in their survey reported two controlled studies which had shown a course to be ineffective. The lack of evaluation has also been noted by Blake (1955), Berg and Rentel (1966), DiLorenzo (1964), Pauk (1965), and Robinson (1950). Of special interest for this

present study is the noticeable lack of research on required study skills courses. Ten studies of required courses have been reviewed by Entwisle (1960) but four of these were in large part reading courses. No study of a required course for all or most freshmen students was found.

Basic approaches in academic support programming

Many approaches have been used and reported in the literature that dealt with academic support and remediation programs. By far the largest segment of the literature reviewed dealt with study skills and reading programs but other approaches have been detailed. The basic division was between study skills and reading programs, the study skills approaches dealt mainly with the presentation of specific skills in studying while the reading approaches dealt mainly with increasing reading rate, improving flexibility in reading and improving comprehension.

Other approaches reported included: desensitization and study skills training (Osterhouse, 1972); the differential effects of individual and group counselling in study habits (Light and Alexakos, 1970); structured and unstructured group counselling (Chestnut, 1965); hypnosis (Oetting, 1964); the effects of self-monitoring and self-administered reinforcement on study behaviour (Van Zoost and Jackson, 1974); the teaching of others as a means of improving study habits

(Jackson and Van Zoost, 1974); and behavioural contracts in reading and study (Birdwell, 1971-72).

Extent of offering of study skills programs

The extent of the offering of study skills and reading programs in Canadian colleges and universities has been documented by F. Margaret Hayward (1971). Of sixty universities contacted, fifty-three or 88 percent responded and of these thirty-two or 53 percent offered some form of instruction. Of 138 colleges contacted, 105 or 76 percent responded and of these, fifty-two offered some form of instruction, while fifty-three did not. The nature of the offerings were not specified and it was not possible to determine from the report how many institutions offered only study skills, only reading programs, both or a combination of both. She noted, however, that at some universities and colleges the reading course was separated from the study skills course. It was assumed that this indicated that the majority offered a combined course. It was also noted that a small percentage at the college level offered instruction in reading and study skills as part of an English or communications course.

Based on a survey conducted in 1953, W.S. Blake, Jr. (1955) reported that 90 percent of colleges in the United States offer some kind of study skills course, and that eleven percent require such a course of all freshmen. Commenting upon the percentage of required courses he noted that,

> All entering freshmen should be assigned to a program designed to indoctrinate them in the life on campus and the minimal skills needed to achieve their goals at college and afterward; and the services of the program - tutorial, remedial reading, study skills and reading courses, counseling, and the like - should be open to all students on campus who feel a need for such services. (p. 98)

Two studies, Eckert and Jones (1935), and Behrens (1935), indicated that study skills courses have been offered at the college and university level for over forty years. Behrens' doctoral dissertation, on which the 1935 report was based, employed students who were enrolled at university in the academic year 1930-31. It was noted that,

> For a number of years special attention has been directed particularly to those students in college who, because of low marks, cannot remain in college without special help. Recently, there has grown up a practice of assigning these students to special classes where they may learn adequate methods of study. (p. 195)

It appeared, then, that classes in study skills had been offered at the university level at least as early as the late 1920's. Thus programs or courses in study skills have been offered for fifty years and perhaps much longer.

Traditional formats

Walter S. Blake (1955) and F. Margaret Hayward (1971) and M.E. Tresselt (1952) have commented upon the format of study skills programs in the United States and Canada.

Blake (1955) noted that most study skills programs are offered to a limited part of the student population. Of the universities that responded to his questionnaire; 42 percent admitted voluntary and referred students, 40 percent admitted only voluntary students, 11 percent required all freshmen to enrol and 6 percent did not state admittance policies. He further noted that over half of the programs surveyed did not give any academic credit, and also that those lecturing in study skills were not usually trained for such instruction.

> At present nearly all workers are educators, psychologists or other kinds of specialists not necessarily trained to be workers in study skills programs. Workers who have majored in areas such as education or psychology might have some of the general qualifications needed, such as the desire to work with students, but workers have the special qualifications by chance.
>
> (p. 99)

He found that only one institution offered a training program specifically for those teaching in this area.

Hayward (1971) surveyed 60 universities and 138 colleges in Canada and 53 universities and 105 colleges responded. At the university level she found that thirty-two or 53 percent offered some form of study skills and/or reading instruction. At the college level she found that fifty-two or 37.7 percent offered some form of instruction in study skills and/or reading. Average length of the courses was 8 weeks with two or

three meetings per week at the university level and fifteen weeks with three meetings per week at the college level. She was not able to establish a firm faculty-student ratio but she noted that employed in the thirty-two university level courses were, 24 full-time faculty in reading and study, and 33 part-time reading and study or counselling faculty. It was also noted that in the five years previous to her study, reading and study programs had been developed across Canada and that only six courses had closed out.

She concluded that,

> As students realize the vast and demanding reading and study skills necessary to deal with the ever growing mass of printed words with which they must contend, they are eager and grateful for techniques for survival. (p. 29)

In an earlier study, Tresselt (1952) surveyed some thirty colleges and universities offering study skills courses. He eliminated from his study those courses which dealt with reading improvement or general orientation programs. Based on the replies of sixteen respondents, he examined the qualifications of the instructors, the methodology of teaching the class, and the evaluation of the course. He found that four of the instructors held doctorates and twelve held masters degrees; eleven had their degree in the field of education and five in the field of psychology; and the median number of years teaching the course was three with a range of one to seven. The number of assistants ranged from none to six; the range of students from five up to an entire freshman class; and the median was one assistant with 20 students per class. The majority of students taking the course were freshmen. The usual format

was lecture supplemented by interviews, discussions, individual testing, and laboratory sections in various combinations. The responses to evaluation questions were made without supporting data but the overall opinion was one of satisfaction with student progress.

Non traditional formats

There are drawbacks to the implementation of study skills courses where traditional lecture methods are used. Some specification of the commonly cited drawbacks are cited by Neidt (1967). He found that the shortage of teaching personnel, the demands of subject-matter areas, the difficulty of providing consistently high caliber presentations and problems of scheduling were most frequently cited. In addition to these the cost of introducing such programming must be considered.

The typical student/faculty ratio is about twenty students to each teacher. Where small enrollments are envisaged this may not necessitate a massive input in terms of personnel and consequently a relatively small financial input. But if large enrollments are envisaged and the traditional lecture format is retained, then a large financial input would be required. However, if non-traditional methods are employed then the financial input may be lowered, and the above limitations cited by Neidt overcome.

Neidt has conducted research on student reaction to video-taped instruction generally, and on video-taped study skills instruction specifically. With respect to reaction to video-taped instruction generally, Neidt (1962) found that,

> Although high school students prefer conventional classroom instruction to television-correspondence instruction, it is not because they perceive the characteristics of the teacher differently in the two situations, but because of factors inherent in the instructional television situation.
>
> (p. 344)

He found that the most influential factor contributing to the unfavorable attitudes toward television was the lack of intercommunication between teachers and students. He noted that the student response to the televised instruction was in part dependent upon the prior experience of the teacher with televised teaching, the more favorable response being to an experienced television teacher. In this study Neidt did not investigate possible differential effects upon academic achievement between the televised/correspondence and regular classroom conditions.

The effect of video-taped instruction of study skills upon grade averages was also researched by Neidt (1967). Unlike the previous study, university and not high school students were used. The instructor was Dr. F. Vattano and the program consisted of ten 30 minute video-taped lessons. Neidt found that the student reaction to tapes was favorable, that the program met student needs, and that the grade point average of those enrolled was significantly higher than that of the population as a whole. However, it is noteworthy that no control groups were used, and no attempt was made to control for the possibility of a higher motivational level of the students who volunteered for the course. Neidt noted the need for research on the use and effects of video-taped instruction in the area of study skills programming.

Criteria of evaluation

It was noted earlier that most of the evaluations published report significant gains in academic achievement. However, the "educational" significance of these "statistically" significant gains was not usually demonstrated. In attending to this problem, Pauk (1965) reported not only change in grade average but also discussed the significance of the change within the grading system used. At Cornell University where the study was undertaken, a small change in grade average could be of high educational significance, for 54.3 percent of the cumulative grade averages of the students fell between 70-79 and 32.5 percent between 75-79. In this context a change from 75 to 78.43 (difference of 3.43) would reflect a change of 22 percentile rank units. Thus the net gain for the program of 3.43 percentage points, which was statistically significant, also had a practical significance which would not be evident unless the Cornell grading system was also reported. The procedure used by Pauk was not found elsewhere in the literature. Entwisle (1960) has noted that,

> The amount of improvement may be statistically significant, but not educationally significant. It is difficult to comment on this point because of the various kinds of grade-scales in use at various schools. (p. 250)

Still the most usual criterion of evaluation involved the use of change in grade average. The use of change in grade average as a criterion of evaluation may be subject to bias in that the initial measure of performance could be an uncontrolled variable where differences between Control and Experimental groups on this variable were noted. Ferguson (1971) has suggested that the

analysis of covariance was an acceptable form of statistical control in such cases, where the influence of the covariate (in these cases the initial measure of grade average) is removed by a linear regression method and the residual sum of squares are used to provide the variance estimates used to make tests of significance. Where acceptable statistical control of the initial measure was not used, tests of significance should be interpreted with caution.

Of secondary importance and incidence was change in study habit inventory scores. The use of such instruments has been criticized in that they are basically self-report devices and subject to faking. Also, higher scores after completion of a study skills course may reflect a higher degree of knowledge of correct or approved study habits and attitudes and no more. Attitude and rating forms designed to test reaction to the study skills course are also problematic for the same reasons. This concern has been recognized by many researchers, among them Entwisle (1960) and Roark and Harrington (1974). However, their use with grouped data and as a supplementary measure to change in grade average seems acceptable.

While it is accepted that change in grade average is the sine qua non in evaluation of study skills courses, it is possible that other, often intangible, criteria are important. Such criterion might include lower drop-out rates, higher rates of graduation, lessened study burdens, and heightened self concept. However, the relationship of these criteria to completion of a study skills course would be complex and difficult to establish.

Required study skills courses

Ten evaluations of required study courses were reviewed by Entwisle (1960), and of these at least four involved to a large extent reading improvement courses. Of the six remaining studies, only two were required study skills courses which employed college students with control and experimental groups of equal intelligence. These two, Tresselt and Richlin (1951) and Winter (1936) report gains in grade average of the experimental over control groups.

Winter (1936) attempted to solve the heavy mortality rate among freshmen students at West Virginia University. All freshmen were required to take the American Council intelligence test and those whose percentile ranks were twenty or below were required to complete a study skills course with exceptions granted to those whose high school average was fair or better. The control groups were chosen from those excused because of schedule problems and from the two preceding freshmen classes, composed of students of equally low rank. Five hours per week were devoted to the course, two hours of discussion of the principles of study and three hours of supervised study. He found that the experimental group had 51.5 percent more honour points than the control groups after one semester of study. (Honour points awarded as A = 3, B = 2, C = 1 and D = 0). Winter followed the performance of the experimental and control group of 1930 over four years of study. He found that distribution in grades for the groups was negligible but that the average number of semesters attended by the experimental group was .84 in excess of the controls, and that the average number of hours passed was 54.97 for the experimental group and 45.85 for the con-

trol group, a difference of 9.12 hours. He concluded that,

> It would appear from these figures that the course in How-to-Study produced a temporary salutory effect on the students' achievement, but that over a period of years it can hardly be said to have justified itself. (p. 116)

Tresselt and Richlin (1951) studied the effects over two years of the "How to Study" course at New York University. The students who took the course had been referred because of a low academic average. The course involved a combination of lectures, group discussions and individual interviews. They found that most of the students' difficulties fell into three categories: ability, personality or adjustment to the total situation, and study methods. They found that the averages of students taking the course increased significantly over two years, also that their scores on the Wrenn Study Habits test also increased significantly. However, they noted that the amount of improvement seemed to vary according to various classifications. Students had been divided into high and low groups on the basis of performance on intelligence, personality and study habits tests. It was found that the greatest improvement was demonstrated by those students classified as high in intelligence and personality, and low in study habits. The personality dimension proved to be the most problematic, depending upon severity. The general conclusion was that while the course generally produced statistically significant improvement, there was a differential effect dependent upon the combination of the intelligence, personality and study habits variables. The problem of poor study techniques was the easiest to correct regardless of the other variables.

A study of the effects of a required study and reading skills program for probationary college freshmen was undertaken by Blake (1956) at the University of Maryland. Over eight hundred students who did not meet the normal entrance requirements of the university were involved in the program and Blake presented data on selected groupings of these. The academic performance of the students was measured in several ways. An examination of the sociology grades for 128 experimental and 122 control group members (controls being selected from the non-probationary students) showed a grade average of 70.47 and 75.60 respectively. Over a four and one-half year period an examination of academic success revealed that 22.6 percent of the 128 member experimental group and 22.9 percent of the 122 member control group graduated in that period. Blake states that,

> It would seem that the academic success of the probationers was considerable, at least partly due to the training provided in the study and reading skills program. (p. 91)

And,

> In view of the findings ... it appears that the compulsory training given students does help many achieve their immediate goals... (p. 93).

For a group of one hundred probationary students over a five year period he stated that 21 percent had graduated; 8 percent were still in school; 28 percent had withdrawn; and 43 percent had dropped. Unfortunately, Blake did not present similar data for a control group, and consequently comparison was not possible.

Silverman and Riordan (1974) conducted an evaluation of high risk college students assigned to a study skills and reading program. Twenty-six students were assigned, but only twelve completed the course. They noted improvement on the SSHA and equivalent grade average when compared with a control group (membership unspecified). The authors caution that it was possible that the twelve students who completed the course were more highly motivated than both those who did not complete the course and the control group. They noted that the program may have been giving help to those high risk students who needed it the least.

The reservations expressed by Silverman and Riordan are applicable to other studies of required study skills programs. It would appear that the designation "required" or "compulsory" should be interpreted loosely. Only 12 of the 26 assigned students in the Silverman and Riordan study completed the program, and it was suggested that these were possibly more highly motivated. Mouly (1952) reported that of 320 assigned to a required reading program, 10 percent were randomly excused to provide a control group and 133 or 41.56 percent did not enroll. Of the original 320 only 106 or 33.13 percent completed the program and 49 or 15.31 percent enrolled but for some reason did not complete the program. In effect 182 students or 56.87 percent of the total group who were required to enroll in the program either did not enroll or did not complete it. Again it was possible that those who did complete the program were more highly motivated, and it must be considered that if this were so then that higher motivation level may have been highly significant in determining the reported benefits.

The literature reviewed suggests that while most studies reported statistically significant gains on the criteria used, the largest gains were found with volunteer groups. The studies of required courses typically reported smaller but still statistically significant gains. It could be argued that the larger gains reported for voluntary courses reflected the higher motivational level of volunteers, and the smaller gains reported for required courses may have reflected on overall lower level of motivation. Some students who enrolled in the required courses may have been highly motivated, some may not have been and may have completed the course because it was required. The inclusion of this last group of students in the reports of requried courses may have accounted for the smaller gains. It may well be, as Entwisle (1960), Jackson (1949), Mouly (1952) and Silverman and Riordan (1974), have noted, that the factors of motivation and personality are perhaps highly significant in the determination of the gains reported following the completion of study skills and reading programs.

The present study

The present study, while having some characteristics of studies reviewed, was different in some respects. It was a required course, but unlike most studies of required courses it was not confined to obviously high risk students but involved many students whose previous academic background, while not obviously superior, was at least acceptable. The inclusion of experimental and control groups of two academic levels allowed examination of the effects on a relatively high risk level, (experimental E100F - Grade XI average 64.58 and control C100F - Grade XI average 66.17),

and a medium risk level, (experimental E1000 - Grade XI average 72.98 and control C1000 - Grade XI average 73.65). It was originally intended to include a low risk level; however, for reasons detailed in the next chapter this was not possible. The format of the course was non-traditional in that a filmed presentation was used with no individual counselling and very little class discussion.

The inclusion of the course within the framework of a first year English course, while not unique, was unusual in that most studies have been conducted using a completely discrete study skills course. The inclusion in the English course also meant that no additional class time was added to the students' schedule.

This study lies within the broad field of research on academic support programming. The methodology was on the whole like that of many others, and the evaluation criteria used were quite standard. The format of the study skills course, while not traditional, has been used elsewhere, with one study (Neidt, 1967) reporting a degree of effectiveness.

Summary

In this chapter an attempt has been made to outline briefly the variety of academic support programming; the extent of the offering of study skills courses; their format traditional and non-traditional; and the usual criteria used in evaluation of such courses. The literature dealing with the effects of required study skills courses was reviewed. And finally, a brief attempt was made to place the present study within the context of the review of studies of required courses.

CHAPTER III

METHODOLOGY

This study attempted to show the effect of exposure to a study skills program upon grade average for the semester during which the program was completed, for the semester following completion of the program; and on scores on the Brown-Holzman Survey of Study Habits and Attitudes (Form C); of students required to complete the course as a component of their first year English course.

The design of the study

The design of the study was as follows:

1. Eight sections of the first year English courses, four of English 100F and four of English 1000, were selected randomly from the sections taught by members of the English Department who had agreed to cooperate in the study.

2. Of the four sections of each course two were assigned to a control condition and two to an experimental condition.

3. Those assigned to the experimental condition were exposed to the Study Skills Program. One hour per week normally assigned to English was devoted to this purpose.

4. After exposure to each unit in the Study Skills Program, students completed an assessment of that unit.

5. No treatment was given to the control groups and these followed the normal English course format.

6. At the end of the first semester, upon completion of the Study Skills Program by the experimental groups, both experimental and control groups were administered the Brown-Holzman Survey of Study Habits and Attitudes.

7. The grade averages and English grades of the students involved were collected at the end of the first semester, during which the experimental groups had been exposed to the program.

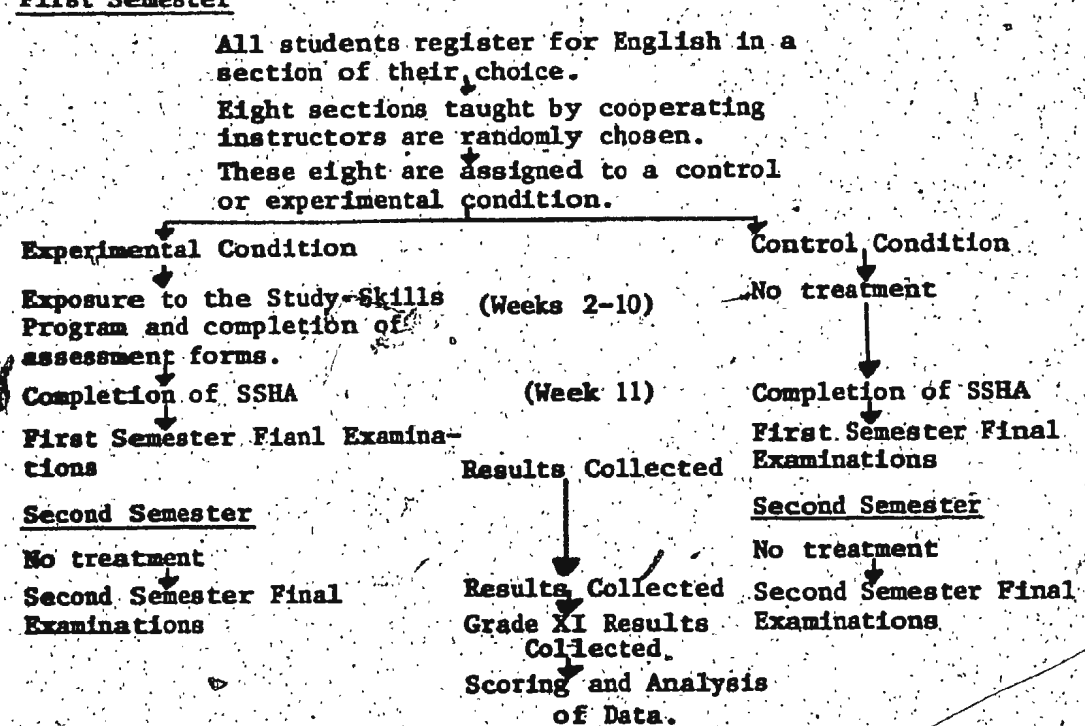
8. The grade averages of the students involved were collected at the end of the second semester.

9. The Grade XI averages of the students involved were collected.

The following diagram of procedure outlines the design steps in chronological order.

TABLE II

DIAGRAM OF PROCEDURE



Description of sample and sampling procedure

The English Department of the Junior Division of Memorial University of Newfoundland was contacted prior to the fall semester of the 1974-1975 academic year. They were asked to cooperate in this study by allowing one hour of the time normally assigned to the teaching of English to be devoted to use in the study. Five instructors of approximately twenty actively teaching that semester, responded to this request and agreed to cooperate in the study. After registration, from the list of sections to be taught by the cooperating instructors, eight sections were randomly selected, so that four of them would be in English 100F and four in English 1000. Students who had registered for these sections became then involuntary participants in the study.

Students usually register in the section of their choice and they are advised in which courses to enrol, but which section of those courses that they select is controlled only by the limitations of section size. Once a given section is full students must opt for another section. Any section of English 100F or English 1000 should then contain a random selection of those who registered in those courses.

The actual sections to be used in the study were chosen only after this registration had been completed and from all the sections taught by the cooperating instructors.

By following the sampling and procedure outlined the chances of any given student enrolling in English 100F or English 1000 being involved in the study were random.

While all the students in the experimental groups were exposed to the program, data was collected only for those that met the following requirements:

1. They were enrolled in their first semester of study,
2. That they were full-time students,
3. That they had no previous university experience,
4. That they were not enrolled in the study skills or reading programs offered by the university Counselling Centre.

One hundred and eighty students met these requirements and they represented 11.3 percent of the total first year enrollment of 1,592 students. Eighty-nine students or 49.44 percent of the sample were in the experimental condition and ninety-one students or 50.55 percent of the sample were in the control condition.

While no attempt had been made to match the control and experimental conditions in terms of previous academic background, it was found that their mean Grade XI averages differed by only 1.2 percentage points, in favour of the control condition. The mean Grade XI average of the control condition was 71.01, and of the experimental condition, 69.89. As no analysis by age or sex was to be performed, this data although available was not recorded.

Methods of data collection

The assessment of the Study Skills Program was carried out by the experimental groups after each unit of the program. The assessment forms were based on those used by C.O. Neidt (1967) in his study using the same program. These assessments were identified only by the

designation E100F or E1000 and students did not identify themselves. A sample set of these assessment forms can be found in appendix A.

The Brown-Holzman Survey of Study Habits and Attitudes was administered to all groups in the final week of study in their first semester. Absentees were contacted individually and asked to complete the survey. The survey contained instructions for self-administration. These were read to the groups before completion. All the students were advised to ask the examiner if they had any questions about any of the items. There was no time limit but all students finished within the fifty minute class period.

All the students involved in the study without exception gave their permission for collection of their Grade XI averages, English 100F or 1000 marks, first semester grade average and second semester grade averages. The University Registrar gave his permission for the collection of these from the students' permanent record sheets. The English 100F or 1000 marks and the first semester grade averages were collected in January, 1975; the second semester averages were collected in May, 1975, as were the Grade XI averages.

Description of instruments used

1. The Study Skills Program Assessment Form. The form used was a slightly modified version of the form developed by C.O. Neidt in his 1967 study of the same program. These forms contained four or five, 5 point scales dealing with aspects of the unit presented. Stu-

dents were instructed to place a check mark in one of the areas of each scale that most nearly described their reaction to the unit. Space was also provided for general comments, reactions, and suggestions.

2. The Brown-Holzman Survey of Study Habits and Attitudes (Form C). The SSHA is a self-report device containing some seven scales. The major scale Study Orientation (SO) gives an overall measure of Study Habits and Attitudes. The six remaining scales fall into two categories, study habits and study attitudes. The study habits section is comprised of the three scales, Work Methods (WM), Delay Avoidance (DA), and an overall score Study Habits (SH). The Study Attitude section is comprised of the three scales, Educational Acceptance (EA), Teacher Approval (TA) and an overall score Study Attitudes (SA). The Survey consists of a one hundred item questionnaire and it is easily hand scored. College norms based on the scores of 3,054 first semester college freshmen at nine colleges in the United States are provided. The test is designed to be self-administered and is normally completed in under thirty minutes.

The survey manual reports internal consistency reliability coefficients for the four basic subscales ranging from .87 to .89. Two test-retest studies provide correlations for the four basic subscales as follows,

TABLE 3

TEST-RETEST CORRELATIONS OF SSHA BASIC SUBSCALES

	Four Week Interval	Fourteen Week Interval
Delay Avoidance	.93	.88
Work Methods	.91	.86
Teacher Approval	.88	.83
Educational Acceptance	.90	.85

(All coefficients based on the scores of college freshmen.)

The manual also provides correlation coefficients of the SSHA with grade point average at six colleges for over 1,700 college freshmen. They were found to range from .25 to .45 with a weighted average of .36. The weighted average coefficients for the four basic subscales were found to be, .31 for Delay Avoidance, .32 for Work Methods, .25 for Teacher Approval and .35 for Educational Acceptance. As the scores on the SSHA were not to be used for individual prediction but in grouped data, it was felt that the reliability and validity coefficients were acceptable.

In Buros' Mental Measurements Yearbook (7th Edition), the reviews of the SSHA all mention the susceptibility of the survey to faking. In their review A.E. Roark and S.A. Harrington stated that this is the major weakness of the survey:

> The usefulness of the SSHA as a research tool is severely limited by its susceptibility to faked scores. Nevertheless, the SSHA has demonstrated a suitable level of reliability, and predictive relationship with G.P.A., to warrant its inclusion in research studies where the above mentioned limitations are recognized and minimized. (p. 1212)

In Buros' 5th Edition, James Deese in his review of the SSHA wrote that:

> This inventory of survey is a unique and valuable contribution to the techniques for assessing the student habits of work and motivation for study. It is more suited for uncovering attitudinal and motivational differences than any other published study inventory and its use is particularly recommended where such difficulties are the prime concern. In addition, its value for research on counselling and remedial teaching must not be overlooked. (p. 782)

It was the general opinion that the SSHA is the most useful survey of its type available and consequently was employed in the study.

Scoring and analysis of data

1. Scoring. The Brown-Holzman Survey of Study Habits and Attitudes was scored and raw scores converted to percentile ranks using the norms for college freshmen. This was a simple clerical task performed by the investigator. The scores were recorded on data cards for computer analysis.

2. Analysis of Data. The data was analyzed initially by the use of the S.P.S.S. Program to provide a Pearson Product Correlation Matrix, along with group means, standard deviations, and variance. The data was then analyzed using the NYMBUL Program which provided a univariate and multivariate analysis of variance, and covariance. Two runs were performed. The first used Grade XI average (GAXI) as a covariate, and the grade averages of semester 1 (GAS1) and semester 2 (GAS2) along with scores on the SSHA as dependent variables. The second run used Grade XI average (GAXI) and the grade average of semester 1 (GAS1) as covariates, and the grade average of semester 2 (GAS2) and the scores on the SSHA as dependent variables. Grade XI Average (GAXI) was used as a covariate to control for any actual differences in the students' scores that was not controlled for by random assignment to the experimental or control groups. It was hypothesized that any effect of the treatment would most likely be evidenced in the semester following completion of the Study Skills Program. The grade average in first semester (GAS1) was then used as an additional covariate in the second run to control for any differences in the students second semester grade average which might be accounted for by differences in the first semester averages.

Limitations of the study

1. It was hoped that the sample would be representative of the first year enrollment. This would necessitate the inclusion of two English 1050 groups. Students in this course have been selected on the basis of having a Grade XI English mark of seventy-five percent or better. They represent about twenty percent of the population in English. Only three hours per week was devoted to English 1050 and the English Department felt that they could not allow one of these hours to be devoted to the Study Skills Program, for they felt that if this were done they would be unable to complete the curriculum. They felt that an extra hour would have to be devoted to the Study Skills Program. While this was practically possible, it would seriously question any comparison drawn between an experimental 1050 group and a control 1050 group who would not have this extra hour. It was also possible to devote an extra hour of English to the 1050 control group but this would then make them in reality an English 1000 group, and again comparison would be questionable. It was decided then to exclude this group entirely.

This limits generalization to the entire population of first year students. This limitation does not interfere with the internal validity of the study but it does necessitate caution in generalization.

2. No control of motivation was attempted in the study although it was recognized that this is an important factor in study skills courses. But as it was in fact necessary to study the effects of the course on students whose initial motivational level was equivalent to the general

population, and as students would be included regardless of motivational level, it was decided that it was not necessary to control for motivation. Such control is normally used when comparing a voluntary experimental group with a control group where differences in motivation may be crucial.

3. The students were exposed to the Study Skills Program without the benefit of either class discussion or individual counselling. The study was designed to test the advisability of a required study skills course with the restriction that such a course must not necessitate more than a minimal input in terms of highly-trained personnel. Obviously, individual counselling for a population of 1,500 to 2,000 would involve a massive input in terms of such personnel. It was also the intent to measure the effect of the Study Skills Program alone. A combination of the Program, class discussion and/or individual counselling would introduce many more variables into the study, with the distinct possibility of multiple interactions of these variables. Consequently, no attempt was made to encourage class discussion and no individual counselling took place.

4. It might be argued that the chances of inclusion in the study of any given first year student were not random. The randomness of inclusion is assumed because of the registration procedure but it cannot be absolutely demonstrated. However, an examination of the mean, and standard deviation of Grade XI results for both control and experimental groups revealed no significant difference. Further the Grade XI average of the students was used as a covariant in the analysis of the results.

5. The final unit of the Study Skills Program series was not presented. This unit dealt with "When and Where to Seek Counsel." Unfortunately, time limitations were such that this unit could not be used. Consequently, this study was based on the presentation of only nine of the ten units in the Program.

6. In that all students in the experimental groups did not attend all the sessions, then for those students who missed sessions, the effects of exposure to a reduced number of the filmed units was being measured. It has been noted above that the final unit was not presented. No attendance records were kept for the first two sessions and when absences were noted, it was decided to take attendance at each subsequent meeting. During the last two sessions students were asked to report the number of units they had seen. Only 38 or 42.7 percent had seen all the units presented; 28 or 31.5 percent had missed one unit; 13 or 14.5 percent had missed two units; 7 or 7.9 percent had missed three units; and 3 or 3.4 percent had missed four units. Thus, for 11.3 percent of the students, attendance was less than satisfactory, and for a further 14.5 percent attendance was marginally satisfactory. The data for these students was not omitted from the analysis, even though it could be argued that they were probably less motivated, and though inclusion of their data might reduce any expected gains. However, it was desired to measure the effect for all students in the experimental sections, and omitting those with poor attendance would obviously bias the sample.

CHAPTER IV

ANALYSIS OF DATA

Introduction

In this chapter the data analysis testing hypotheses 1, 2 and 3 will be presented, along with a summary of the student evaluation of the Study Skills Program. A more complete report of the students' responses in the Study Skills Program assessment forms can be found in Appendix A.

Procedure for data analysis

The raw scores for all groups, experimental and control, were initially analyzed using the S.P.S.S. Program to provide descriptive statistics. The group means and standard deviations for each variable at the high risk (100F), medium risk (1000) and combined levels, can be found in Tables 4, 7 and 10, respectively. A Pearson correlation coefficient matrix was developed, again using the S.P.S.S. Program for each group and these can be found in Appendix B. An analysis of covariance was performed using the NYMBUL Program for each level using group means adjusted for covariates. Two runs were performed. The initial run used group mean scores adjusted for the Grade XI Average (GAXI) covariate. The second run used group mean scores adjusted for the Grade XI Average and the First Semester Average (GAS1) covariates.

Hypothesis I

The Grade XI Average of the 100F Experimental and Control groups was 64.6 and 66.2 respectively; a difference of 1.6 percentage points in favour of the Control groups. The scores on the S.S.H.A. were, with the exception of the Work Methods (WM) scale, consistently higher for the Control group, as were the first and second semester averages and English average. The significance of these differences was tested by means of an analysis of covariance.

Tables 5 and 6 indicate that no significant differences were revealed by the analyses. The F - ratio for multi-variate test of equality of mean vectors with one covariate (GAX1) was 1.4342, which again revealed no significant difference. With two covariates (GAX1 and GAS1), the F - ratio was 1.1360, which revealed no significant difference.

Therefore, Hypothesis I, that the scores of the E100F Experimental groups will not differ significantly from those of the C100F Control groups, was accepted.

TABLE 4

High Risk Level (100F)

Comparison of Mean Scores and Standard Deviations Unadjusted

GRADE AVERAGES

		GAX1	GAS1	GAS2	ENGL.
Experimental (E100F)	Mean Score	64.6	53.6	55.0	56.6
	Standard Deviation	4.1	10.4	11.2	6.9
Control (C100F)	Mean Score	66.2	53.8	52.3	57.9
	Standard Deviation	4.8	9.2	9.2	11.9

SURVEY OF STUDY HABITS AND ATTITUDES

		DA	WM	SH	TA	EA	SA	SO
Experimental (E100F)	Mean Score	38.9	24.8	31.3	20.4	21.6	18.3	21.4
	Standard Deviation	29.6	19.9	25.9	25.0	25.6	24.2	24.6
Control (C100F)	Mean Score	38.5	34.3	35.7	21.7	24.5	21.1	26.5
	Standard Deviation	24.3	23.9	23.5	19.5	23.7	17.8	21.6

TABLE 5

High Risk Level (100F) Analysis of Covariance With One Covariate (GAX1)

Variable	Adjusted Mean Square	Univariate F. Ratio	Significance	Step Down F. Ratio	Significance
GAS2	211.16	2.15	0.15	2.15	0.15
GAS1	0.77	0.01	0.93	0.46	0.50
SO	479.94	0.90	0.35	0.87	0.35
SH	456.83	0.76	0.39	0.27	0.61
SA	142.08	0.32	0.57	1.45	0.23
WM	1,995.71	4.15	0.05	3.73	0.06
DA	0.29	0.00	0.98	0.88	0.35
EA	77.47	0.13	0.72	0.01	0.93
TA	121.55	0.26	0.62	1.54	0.22
English	5.46	0.06	0.81	0.08	0.78

D.F. for Hypothesis = 1
D.F. for Error = 60

TABLE 6

High Risk Level (100F) Analysis of Covariance With Two Covariates (GAX1 and GAS1)

Variable	Adjusted Mean Square	Univariate F. Ratio	Significance	Step Down F. Ratio	Significance
GAS2	198.90	2.59	0.11	2.59	0.11
SO	500.42	0.97	0.33	0.88	0.35
SH	488.07	0.90	0.35	0.27	0.61
SA	146.64	0.33	0.57	1.46	0.23
WM	2,048.53	4.59	0.04	3.73	0.06
DA	1.70	0.00	0.96	0.88	0.35
EA	83.98	0.14	0.71	0.01	0.93
TA	123.65	0.26	0.61	1.54	0.22

D.F. for Hypothesis = 1
D.F. for Error = 59

Hypothesis 2

The Grade XI Average of the 1000 Experimental and Control groups was 73.0 and 73.6 respectively, a difference of 0.6 percentage points in favour of the Control group. The scores on the S.S.H.A. were, with the exception of the Teacher Approval (TA) and Study Attitude (SA) subscales, consistently higher for the Experimental group. The first semester average and English average for the Control group were slightly higher (less than one percentage point) than the Experimental group, with the reverse being true for the second semester average. The significance of the differences was tested by means of an analysis of covariance.

Tables 8 and 9 indicate that no significant differences were revealed by the analyses. The F - ratio for a multi-variate test of equality across mean vectors with one covariate (GAX1) was 1.1145, which again revealed no significant difference. With two covariates (GAX1 and GAS2) the F - ratio was 1.3320, which revealed no significant difference.

Therefore, Hypothesis 2, that the scores of the E1000 Experimental groups will not differ significantly from those of the C1000 Control groups, was accepted.

TABLE 7

Medium Risk Level (1000)

Comparison of Mean Scores and Standard Deviations Unadjusted

GRADE AVERAGES

		GAX1	GAS1	GAS2	ENGL.
Experimental (E1000)	Mean Score	73.0	60.8	61.6	58.3
	Standard Deviation	5.9	8.7	8.7	8.6
Control (C1000)	Mean Score	73.6	61.3	60.9	59.2
	Standard Deviation	6.3	8.1	12.9	5.8

SURVEY OF STUDY HABITS AND ATTITUDES

		DA	WM	SH	TA	EA	SA	SO
Experimental (E1000)	Mean Score	43.5	45.4	43.2	26.7	29.5	25.3	33.5
	Standard Deviation	24.3	27.6	24.8	21.6	20.3	18.6	21.9
Control (C1000)	Mean Score	38.2	38.8	37.2	32.0	28.0	27.8	31.6
	Standard Deviation	26.8	26.5	26.7	24.3	23.2	22.0	25.2

TABLE 8

Medium Risk Group (1000) Analysis of Covariance With One Covariate (GAX1)

Variable	Adjusted Mean Square	Univariate F. Ratio	Significance	Step Down F. Ratio	Significance
GAS2	44.34	0.48	0.49	0.48	0.49
GAS1	1.58	0.02	0.87	0.16	0.69
SO	565.20	1.06	0.30	1.00	0.32
SH	1,267.19	1.99	0.16	0.90	0.34
SA	147.05	0.33	0.57	3.14	0.08
WM	1,491.00	2.11	0.15	0.39	0.53
DA	972.19	1.52	0.22	0.58	0.45
EA	106.30	0.23	0.63	1.03	0.31
TA	786.01	1.47	0.23	2.88	0.09
English	21.17	0.40	0.53	0.50	0.48

D.F. for Hypothesis = 1

D.F. for Error = 114

Table 9

Medium Risk Group (1000) Analysis of Covariance With Two Covariates (GAX1 and GAS1)

Variable	Adjusted Mean Square	Univariate F. Ratio	Significance	Step Down F. Ratio	Significance
GAS2	51.17	0.61	0.44	0.61	0.44
SO	605.44	1.19	0.28	1.00	0.32
SH	1,305.50	2.07	0.15	0.90	0.34
SA	125.47	0.30	0.59	3.14	0.08
WM	1,561.19	2.29	0.13	0.39	0.53
DA	982.94	1.53	0.22	0.57	0.45
EA	122.96	0.28	0.60	1.03	0.31
TA	722.75	1.49	0.23	2.88	0.09

D.F. for Hypothesis = 1

D.F. for Error = 113

Hypothesis 3

The Grade XI Average of the combined Experimental and Control groups was 69.9 and 71.1 respectively, a difference of 1.2 percentage points in favour of the Control group. The S.S.H.A. scores revealed that the Experimental group obtained higher scores on the scales: Delay Avoidance (DA); Work Methods (WM); and Study Habits (SH). The Control group obtained higher scores on the scales: Teacher Acceptance (TA); Educational Acceptance (EA); and Study Attitude (SA); and also on the overall score, Study Orientation (SO). The Control group obtained slightly higher averages in English and the first semester, and the Experimental group obtained a slightly higher second semester average. The significance of these differences was tested by means of an analysis of covariance.

Tables 11 and 12 indicate that no significant differences were revealed by the analysis. The F- ratio for a multi-variate test of equality across mean vectors with one covariate (GAX1) was 0.9119, which revealed no significant difference. With two covariates (GAX1 and GAS1) the F - ratio was 0.4522, which revealed no significant difference.

Therefore, Hypothesis 3, that the scores of the combined Experimental groups will not differ significantly from those of the combined Control groups, was accepted.

TABLE 10

Combined Levels

Comparison of Mean Scores and Standard Deviations Unadjusted

GRADE AVERAGES

		GAX1	GAS1	GAS2	ENGL.
Experimental	Mean Score	69.9	58.2	59.4	57.7
	Standard Deviation	6.7	9.9	10.0	8.0
Control	Mean Score	71.1	58.7	58.2	58.7
	Standard Deviation	6.8	9.2	12.5	8.3

SURVEY OF STUDY HABITS AND ATTITUDES

		DA	WM	SH	TA	EA	SA	SO
Experimental	Mean Score	42.1	39.0	39.5	24.7	27.0	23.1	29.7
	Standard Deviation	25.9	27.0	25.6	22.7	22.2	20.6	23.3
Control	Mean Score	38.3	37.4	36.7	28.6	26.8	25.6	30.0
	Standard Deviation	25.9	25.6	25.5	23.2	23.3	20.8	24.1

TABLE 11

Combined Level Analysis of Covariance With One Covariate (GAX1)

Variable	Adjusted Mean Square	Univariate F. Ratio	Significance	Step Down F. Ratio	Significance
GAS2	229.18	2.47	0.12	2.47	0.12
GAS1	1.88	0.02	0.87	0.17	0.68
SO	14.69	0.03	0.87	0.00	1.00
SH	604.69	0.96	0.33	2.76	0.10
SA	178.00	0.42	0.52	0.16	0.69
WM	301.62	0.46	0.50	0.00	0.96
DA	861.56	1.30	0.26	0.33	0.57
EA	37.56	0.08	0.78	1.67	0.20
TA	571.81	1.08	0.30	0.43	0.51
English	30.61	0.46	0.50	1.21	0.27

D.F. for Hypothesis = 1
D.F. for Error = 177

TABLE I2

Combined Level Analysis of Covariance With Two Covariates (GAX1 and GAS1)

Variable	Adjusted Mean Square	Univariate F. Ratio	Significance	Step Down F. Ratio	Significance
GAS2	213.27	2.61	0.11	2.61	0.11
SO	9.12	0.02	0.89	0.00	1.00
SA	568.00	0.93	0.34	2.76	0.10
SA	197.87	0.49	0.48	0.15	0.69
WM	269.00	0.43	0.51	0.00	0.96
DA	830.12	1.27	0.26	0.32	0.57
EA	29.50	0.06	0.81	1.67	0.20
TA	613.12	1.22	0.27	0.42	0.52

D.F. for Hypothesis = 1

D.F. for Error = 76

Student assessment of Study Skills Program

The first item on each assessment form asked the students to react to the helpfulness of the information presented in the lesson. The responses are summarized in Table 13.

TABLE 13

STUDENT'S EVALUATION OF HELPFULNESS OF INFORMATION PRESENTED

	Of No Help (1)		(2)		(3)		(4)		Very Helpful (5)	
Lesson	No.	%	No.	%	No.	%	No.	%	No.	%
1	3	3.6	16	19.1	30	35.7	21	25.0	14	16.7
2	10	12.8	10	12.8	14	18.0	31	39.7	13	16.7
3	7	9.6	7	9.6	22	30.1	24	32.3	13	17.8
4	5	6.3	7	8.7	11	13.8	28	35.0	29	36.3
5	4	5.0	5	6.3	25	31.2	26	32.5	20	25.0
6	3	3.9	16	20.8	28	36.4	19	24.8	11	14.3
7	2	2.5	2	2.5	28	35.0	26	32.5	22	27.5
8	7	9.2	7	9.2	26	34.2	21	27.6	15	19.7
9	0	0.0	4	5.1	12	15.4	26	33.3	36	46.2
Overall	-	5.9	-	10.5	-	27.8	-	31.4	-	24.4

It would appear from Table 13 that on the whole the evaluation was favourable. However, certain lessons (4,5,7 and 9) received a rather high evaluation, while others (2 and 6) received a rather low evaluation.

An extremely high evaluation was received by Lesson 9, "How to Take Examinations", which was presented just two weeks prior to the first semester final examinations.

The final item on each assessment form asked the student to report the extent to which they intended to change their study behavior in view of the information presented. The responses are summarized in Table 14.

TABLE 14

STUDENTS' ANTICIPATED CHANGE IN STUDY BEHAVIOR

	Very Little (1)		(2)		(3)		(4)		Very Much (5)	
Lesson	No.	%	No.	%	No.	%	No.	%	No.	%
1	7	8.3	10	11.9	20	23.8	21	25.0	26	31.0
2	6	7.7	4	5.1	35	44.9	19	22.6	14	18.0
3	9	12.3	11	15.1	17	23.3	26	35.6	10	13.7
4	7	8.7	5	6.3	15	18.7	18	22.5	35	43.8
5	2	2.5	4	5.0	20	25.0	34	42.5	20	25.0
6	7	9.1	16	20.8	26	33.8	18	23.4	10	13.0
7	2	2.5	4	5.0	28	35.0	34	42.5	12	15.0
8	6	7.9	13	17.1	23	30.3	19	25.0	15	19.7
9	0	0.0	6	7.7	12	15.4	22	28.2	38	48.7
Overall	-	6.6	-	10.4	-	27.8	-	29.7	-	25.3

The Overall evaluation was again favourable with the results closely corresponding to Table 13. Again certain lessons (4,5,7 and 9) received a high evaluation, and other lessons (2, 6, and 8) received low evaluations.

With the exception of the assessment forms for lessons two and three, an item was included asking the students to report their previous familiarity with information presented. The responses are summarized in Table 15.

TABLE 15

STUDENTS EVALUATION OF PRIOR FAMILIARITY WITH INFORMATION PRESENTED

	(1)		(2)		(3)		(4)		(5)	
Lesson	No.	%	No.	%	No.	%	No.	%	No.	%
1	22	26.2	22	26.2	25	29.8	8	9.5	7	8.3
4	6	7.5	29	36.3	30	37.5	8	10.0	7	8.7
5	14	17.5	13	16.2	15	18.8	13	16.2	25	31.3
6	9	11.7	18	23.4	23	29.9	18	23.4	9	11.7
7	14	17.5	24	30.0	16	20.0	8	10.0	18	22.5
8	13	17.1	27	35.5	22	29.0	11	14.5	3	3.9
9	10	12.8	30	38.5	22	28.2	14	17.9	2	2.6
Overall	-	15.8	-	29.4	-	27.6	-	14.5	-	12.7

Students on the whole reported a considerable prior familiarity with the information presented. The only exception to this was Lesson 5, "Learning: An Active Process", which stressed the difference between active and passive attitudes to learning. Lesson 6, "Learning and Reinforcement", and to a lesser extent Lesson 7, "Classroom Learning", also seem to have presented relatively new information.

Other items included in the assessment forms related specifically to the unit presented and were not summarised. However, the number responding and percentage responding to each category of each item are included in Appendix A.

The assessment forms allowed the students to give general comments or suggestions. Most of the students did not avail of this opportunity and those comments that were made referred either to the helpfulness of the information presented or to the quality of the presentation itself.

It was noted that the filmed presentations were "dated". The program was filmed in 1967 and as simulated student life situations were used the fashions of the times were evident. The program was presented in 1974 and the students commented upon the obvious differences in fashion. Comments were made which noted that some of the simulated student life situations seemed exaggerated and involved sex stereotypes. Some unfavourable comments were made as to the style of the lecturer. This involved, in part, the use of idiomatic language in vogue in 1967 but no longer fashionable, and in part, his lecturing style which was perceived as too forceful. However, it would appear from Table 13 that the students differentiated the quality of the material presented from the quality of its presentation, as they gave a favourable evaluation of the helpfulness of information presented. There were a number of comments stressing the particular helpfulness of particular items within a unit, or a particular unit within the context of those already viewed.

The overall evaluation was one of the general helfulness of the material presented, although Table 15 would indicate that much of this was already familiar to the students, and of dissatisfaction with method or style of presentation, especially in so far as it was "dated".

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

The study investigated the effects of requiring first year students to complete a study skills course, and also investigated the student reaction to the specific program used. The purpose was to provide information upon which to advise as to the probable outcomes of the introduction of a required course in study skills for most first year students. Financial limitations were such that such a required course could be introduced only if it did not require a large input of personnel. With this limitation, it was decided to use a filmed course and the Study Skills Program of Dr. F.J. Vattano was selected. The course consisted of an exposure to these filmed units with no other intervention.

It was hypothesized that no significant differences would be found, with the outcome measures employed, at the medium risk, high risk, and combined levels between Experimental and Control groups. The null hypotheses 1-3 were accepted without exception. The conclusion that exposure to the study skills program did not produce significantly higher grade averages or scores on the SSHA at any level could not be rejected, as the Experimental and Control group means on all outcome measures at all levels were statistically equivalent.

Student reaction to the Study Skills Program was equivocal. On the whole they gave a favourable evaluation of the helpfulness of the

information presented in the program, and also they reported intentions to change their study behaviour as a result of the information presented. However, they also reported that a considerable amount of the information presented was not new to them and they commented unfavourably upon the quality or style of the presentation.

Students in the Experimental condition stated that they intended to change their study behaviours in light of the information presented in the program. However, the results indicate that these students obtained a level of performance on the measures used that was no better than that of the students in the Control condition. Several explanations could be given for this situation. However, the explanations to be presented are highly speculative and should be taken as such.

It was possible that the students in the Experimental condition employed for whatever reason a favourable response set. It could have been that their statement of intent to change their study behaviours was made in order to elicit a favourable response from the researcher. However, this argument can be countered by a consideration of the critical responses in the "comments" section of the assessment forms, by the fact that the assessment forms were anonymous, and by an examination of the responses to the SSHA which indicated no attempt to favourably impress the researcher. It could have been that the statement of intent to change study behaviours was never actualized, thus accounting for the results. This might have been accurate especially for those whose attendance record was poor. However, there was a sizeable per-

centage of the students who through their attendance demonstrated perhaps some committment to change and to the purpose of the Study Skills Program, (over 40 percent attended all sessions, and a further 30 percent missed only one). Yet it must be concluded that there was no indication of any change in study behaviour or level of academic achievement evidenced in the measures used.

Two outcome measures were used, the academic average of the students and their performance on the SSHA. It was found that the Control and Experimental groups performances on these measures were statistically equivalent. It could be argued that perhaps the Experimental group used more efficient study methods but that this was not reflected in either their grade average or their scores on the SSHA. However, it would be just as reasonable to argue that the Experimental group did not employ more efficient methods of study, as indicated by these measures. The question resolves to whether or not the measures used were sufficient to detect all the possible differences.

As the primary purpose of the study was to attempt to increase the level of academic performance, measured by grade average, then it must be concluded that the results indicate that no increase was evidenced. However, if the primary purpose was to develop more efficient methods of study then grade average alone might not be a sufficient measure. It would have to be supplemented by a measure of the efficiency of the actual study methods used. The SSHA would appear to meet this requirement. However, this might be questioned. The major objection is the self-report nature of the

SSHA in that it is not a direct measure of study habits and attitudes and, even if "faking good" was discounted, it was possible that the criteria of evaluation used by Control and Experimental students might have differed significantly. Students in the Experimental condition who had completed the Study Skills program just prior to completing the SSHA might be more highly sensitized to "correct" study habits and consequently, might be more critical of their own performance. Control students not exposed to the program might have been less critical of their performance thus questioning any direct comparison of scores achieved.

These speculations cannot of course temper the results presented in Chapter IV, and the conclusion must be that the intervention attempted did not meet its primary purpose. The results do not indicate that this purpose cannot be met, but rather that it is unlikely that it will be met in the manner attempted in this study. Again, the reasons for this have not been demonstrated but there is some evidence that the Study Skills Program itself was in some ways inappropriate and it is possible to speculate that the use of the program without any individual counselling and a minimal amount of class discussion lessened the probability of any significant change in behaviour. The interaction of a student interested and committed to change and an instructor committed to fostering this aim might be a crucial element in achieving improvement. There is every indication that the simple presentation of "correct" methods of study was insufficient to produce change. It would appear that a required course in Study Skills designed to improve academic performance

will have to attend both to imparting specific knowledge and to developing the motivation to achieve.

Recommendation I: In view of the results reported in Chapter IV, it is recommended that no attempt be made to introduce the Study Skills Program as a required course for most first year students.

An examination of the mean percentile ranks reported for the SSHA reveal that the students in the study obtained a very low rank when compared to college norms reported in the SSHA manual. These norms were based on the performance of 3,054 first semester college freshmen at nine colleges in the United States.

TABLE 16

MEAN SSHA PERCENTILE RANKS BY RISK LEVEL

SCALE	HIGH RISK (100F)	MEDIUM RISK (1000)	COMBINED
DA	38.7	40.9	40.2
WM	29.6	42.1	38.2
SH	33.5	40.2	38.1
TA	21.1	29.4	26.7
EA	23.1	28.8	26.9
SA	19.7	26.6	24.4
SO	24.0	32.6	29.9

On the overall score, Study Orientation (SO), the High Risk (100F) group were at the 24 percentile rank; the Medium Risk (1000) group were at the 33 percentile rank; and the Combined groups were at about the 30 percentile rank. Ranks obtained on the four basic subscales (DA, WM, TA, EA) ranged from 21 to 42. The performance on the Study Habits scales was considerably and consistently higher than the performance on the Study Attitudes scales.

TABLE 17

MEAN GRADE AVERAGES OBTAINED BY RISK LEVEL

	HIGH RISK (100F)	MEDIUM RISK (1000)	COMBINED LEVELS
Grade X (GAXI)	65.4	73.3	71.0
Semester 1 (GAS1)	53.7	61.1	58.5
Semester 2 (GAS2)	53.7	61.3	58.8

The change from Grade XI average to first and second semester university average was approximately 12 percentage points. The High Risk groups (100F) achieved an overall average of 53.7 in their first two semesters. If they maintained this level of performance then they would be unable to graduate as present university regulations require an overall average of 55. It would appear that the intervention attempted in this study did not benefit this group academically. However, as they are High Risk students, some other form of intervention should be investigated.

If the university continues to accept students who can be identified as High Risk, then perhaps an effort should be made to give them special assistance. The data reported by Dr. A.M. Sullivan which was included in Chapter 1 would indicate that students with a Grade XI average of below 65 are in such a category and that perhaps a Grade XI average of below 70 should be used as the criterion for such assistance.

Recommendation 2: In view of the academic performance of the High Risk students, it is recommended that other forms of intervention be investigated with the purpose of improving the performance of these students.

The grades achieved in the English course taken by the Control and Experimental groups were comparable (See Table 18). This is so despite the fact that the Experimental groups received one hour less per week in English instruction. For the 1000 level Experimental group, this meant that they received three hours of English per week, which would make them in fact equivalent to an English 1050 group. English 1000 and 1050 have the same course content, but at the 1000 level four hours per week devoted to the course as compared to three hours for the 1050 level. The rationale was that the 1000 level students had not demonstrated as high a level of achievement as the 1050 level and consequently required an extra amount of class time. However, the E1000 Experimental group with three hours of English per week achieved as well as the E1000 Control group with four hours per week, which questioned the assumption that extra

class time will lead to a higher level of performance.

TABLE 18

COMPARISON OF ACHIEVEMENT IN ENGLISH

	ENGLISH 100F	ENGLISH 1000
Experimental (3 hrs per week)	56.6	58.3
Control (4 hrs per week)	57.9	59.2

At the 100F level the Experimental (E100F) group received three hours per week as compared to four for the Control (E100F) group. Again the extra class time seemed to have made little difference in the grades achieved. While it is intuitively appealing to assume that devoting extra class time to a course will improve performance this may not be so. The results reported on Table 15 might indicate that either the extra hour in English was beneficial and the study skills course had compensated for the missed time, or that the extra hour in English was not beneficial and the study skills course had no effect. Because of the confounding of the study skills course and the shorter class time in English, it was not possible to deterimen which, if either explanation, is accurate.

Recommendation 3: It is recommended that the Junior Division investigate the effects of requiring extra class time at various levels within courses to determine the effects of such a procedure. This procedure has been followed in Junior Division for the following

subject areas: English, Maths, Biology, Chemistry, Physics and French.

Summary:

The purpose of the study was threefold:

1) To assess student reaction to the Study Skills Program,

2) To determine the effect of exposure to this program on academic performance over two semesters and on the SSHA,

and 3) To make recommendation as to its possible use as a required course.

Though it became apparent that the intervention attempted in the study did not produce a significant improvement in academic achievement, the purpose of the study was still achieved and recommendations made.

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APPENDICES

APPENDIX A

Study Skills Program Assessment Forms

The following pages contain copies of the assessment forms used in the study. On each of the divisions of the scales the numbers responding are included in parenthesis followed by the percentage of those responding to the item.

STUDY SKILLS PROGRAM ASSESSMENT #1

PERSPECTIVES ON LEARNING

1. Information presented in this lesson seemed to me to be

Of no help at all				Very Helpful
(3) 3.6%	(16) 19.1%	(30) 35.7%	(21) 25.0%	(14) 16.7%

2. The idea of educational values and goals affecting my studying behaviors was

New to me				Known to me
(7) 8.3%	(8) 9.5%	(25) 29.8%	(22) 26.2%	(22) 26.2%

3. Knowing the factors for success in college (ability, strategies, motivation, psychological adjustment) seems to me to be

Of no help at all				Very Helpful
(1) 1.2%	(2) 2.4%	(27) 32.1%	(25) 29.8%	(29) 34.5%

4. As a result of this presentation, my outlook toward studying and learning will

Stay the same				Be Re-examined
(7) 8.3%	(10) 11.9%	(20) 23.8%	(21) 25.0%	(26) 31.0%

STUDY SKILLS PROGRAM PROCESS ASSESSMENT #2

SCHEDULING YOUR TIME

1. Information presented in this lesson seemed to me to be

Of no help at all				Very Helpful
(10) 12.8%	(10) 12.8%	(14) 18.0%	(31) 39.7%	(13) 16.7%

2. Past experiences with trying to make and keep a study schedule have been

Unsuccessful				Very successful
(12) 15.4%	(15) 19.2%	(36) 46.2%	(11) 14.1%	(4) 5.1%

3. The thought of scheduling my responsibilities and free time

Turns me off				Appeals to me
(5) 6.4%	(13) 39.7%	(34) 43.6%	(14) 18.0%	(12) 15.4%

4. As a result of this presentation, I plan to

Stay swinging				Get scheduled
(6) 7.7%	(4) 5.1%	(35) 44.9%	(19) 22.6%	(14) 18.0%

STUDY SKILLS PROGRAM PROCESS ASSESSMENT #3

THE STUDY ENVIRONMENT

1. Information presented in this lesson seemed to me to be

Of no help at all				Very Helpful
(7) 9.6%	(7) 9.6%	(22) 30.1%	(24) 32.3%	(13) 17.8%

2. Knowing the characteristics of a good study environment (free of distractions, comfortable, spacious, available) seemed to me to be

Of no help at all				Very Helpful
(5) 6.9%	(10) 13.7%	(17) 23.3%	(16) 21.9%	(25) 34.2%

3. My present study environment would be classed as

Poor				Excellent
(7) 9.6%	(10) 13.7%	(28) 38.4%	(22) 30.1%	(6) 8.2%

4. As a result of this presentation, I plan to change my study environment

Not at all				A great deal
(9) 12.3%	(11) 15.1%	(17) 23.3%	(26) 35.6%	(10) 13.7%

STUDY SKILLS PROGRAM PROCESS ASSESSMENT #4

LEARNING STRATEGIES

1. Information presented in this lesson seemed to me to be

Of no help at all				Very Helpful
(5) 6.3%	(7) 8.7%	(11) 13.8%	(28) 35.0%	(29) 36.3%

2. The idea of approaching learning by specific strategies was

New to me				Used by me
(7) 8.7%	(8) 10.0%	(30) 37.5%	(29) 36.3%	(6) 7.5%

3. The method of presenting learning strategies was

Not effective				Very effective
(7) 8.7%	(0) 0.0%	(23) 28.8%	(30) 37.5%	(20) 25.0%

4. As a result of this presentation, I plan to try the suggested learning strategies

Not at all				As often as possible
(7) 8.7%	(5) 6.3%	(15) 18.7%	(18 22.5%	(35) 43.8%

STUDY SKILLS PROGRAM PROCESS ASSESSMENT #5

LEARNING: AN ACTIVE PROCESS

1. Information presented in this lesson seemed to me to be

Of no help at all				Very helpful
(4) 5.0%	(5) 6.3%	(25) 31.2%	(26) 32.5%	(20) 25.0%

2. The SQ3R Method of Study (Survey, Question, Read, Recite Review) was

Unknown to me				Known to me
(25) 31.3%	(13) 16.2%	(15) 18.8%	(13) 16.2%	(14) 17.5%

3. Considering the ways of making learning active (SQ3R Method, writing then reading, card system, studying in groups, physical posture), I would classify my past approach to learning as

Passive				Active
(3) 3.7%	(15) [illegible]8%	(44) 55.0%	(17) 21.3%	(1) 1.2%

4. As a result of this presentation, my approach to learning will be more

Passive				Active
(2) 2.5%	(4) 5.0%	(20) 25.0%	(34) 42.5%	(20) 25.0%

STUDY SKILLS PROGRAM PROCESS ASSESSMENT #6

LEARNING AND REINFORCEMENT

1. Information presented in this lesson seemed to me to be

Of no Help at all				Very helpful
(3) 3.9%	(16) 20.8%	(28) 36.4%	(19) 24.67%	(11) 14.3%

2. Knowing about learning curves and the reasons for plateaus in learning seemed to me to be

Unimportant				Important
(5) 6.5%	(18) 23.4%	(17) 22.1%	(24) 31.2%	(13) 16.9%

3. Understanding the variables influencing rate and efficiency of learning (delay of reinforcement, specificity of reinforcement, repetition, active vs. passive attitude, meaningfulness, whole vs. part, and massing vs. spacing) seemed to me to be

Of no Help at all				Very Helpful
(3) 3.9%	(6) 7.8%	(31) 40.3%	(31) 40.3%	(6) 7.8%

4. Knowledge about principles of reinforcement and how they are applied to learning was

New to me				Used by me
(9) 11.7%	(18) 23.4%	(23) 29.9%	(18) 23.4%	(9) 11.7%

5. As a result of this presentation, I will be able to apply principles of reinforcement to my learning

Not at all				Very much
(7) 9.1%	(16) 20.8%	(26) 33.8%	(18) 23.4%	(10) 13.0%

STUDY SKILLS PROGRAM PROCESS ASSESSMENT #7

CLASSROOM LEARNING

1. Information presented in this lesson seemed to me to be

Of no help at all				Very helpful
(1) 2.5%	(2) 2.5%	(28) 35.0%	(26) 32.5%	(22) 27.5%

2. The idea of being able to shape the professor's behavior in his classroom presentation was

New to me				Known to me
(18) 22.5%	(8) 10.0%	(16) 20.0%	(24) 30.0%	(14) 17.5%

3. The suggestions to students about classroom learning (coming prepared, attending classes, sitting in front, getting there on time, listening properly, asking questions, and taking notes) seemed to me to be

Unimportant				Important
(0) 0.0%	(0) 0.0%	(10) 12.5%	(26) 32.5%	(44) 55.0%

4. Of the suggestions given for classroom learning, I already use

None of them				All of them
(0) 0.0%	(8) 10.0%	(36) 45.0%	(34) 42.5%	(2) 2.5%

5. As a result of this presentation, I can see myself applying the suggestions for classroom learning

Not at all				Very much
(2) 2.5%	(4) 5.0%	(28) 35.0%	(34) 42.5%	(12) 15.0%

STUDY SKILLS PROGRAM PROCESS ASSESSMENT #8

IMPROVING YOUR READING SKILLS

1. Information presented in this lesson seemed to me to be

Of no help at all				Very helpful
(7) 9.2%	(7) 9.2%	(26) 34.2%	(21) 27.6%	(15) 19.7%

2. The idea of reading for learning being a different kind of reading requiring pacing to the demands, purpose and content of the task was

New to me				Used by me
(3) 3.9%	(11) 14.5%	(22) 29.0%	(27) 35.5%	(13) 17.1%

3. My reading habits (perceptual skills, speed, vocabulary, comprehension, and methods) have been

Poor				Excellent
(8) 10.5%	(18) 23.7%	(27) 35.5%	(22) 29.0%	(1) 1.3%

4. As a result of this presentation, I plan to use the suggestions given to work on improving my reading skills

Not at all				Very much
(6) 7.9%	(13) 17.1%	(23) 30.3%	(19) 25.0%	(15) 19.7%

STUDY SKILLS PROGRAM PROCESS ASSESSMENT #9

HOW TO TAKE EXAMINATIONS

1. Information presented in this lesson seemed to me to be

Of no help at all				Very helpful
(0) 0.0%	(4) 5.1%	(12) 15.4%	(26) 33.3%	(36) 46.2%

2. The suggestions for taking exams (preparing for exams, using test taking strategies, and profiting from exams) were

New to me				Used by me
(2) 2.6%	(14) 17.9%	(22) 28.2%	(30) 38.5%	(10) 12.8%

3. My approach to taking exams in the past in terms of attitude and preparation would be classed as

Poor				Excellent
(4) 5.1%	(12) 15.4%	(37) 47.4%	(20) 25.6%	(4) 5.1%

4. As a result of this presentation, I plan to apply the suggestions given

Not at all				As much as possible
(0) 0.0%	(6) 7.7%	(12) 15.4%	(22) 28.2%	(38) 48.7%

APPENDIX B

The following tables report the Pearson Correlation Coefficient Matrices for;

High Risk (100F) Control Group

High Risk (100F) Experimental Group

Medium Risk (1000) Control Group

Medium Risk (1000) Experimental Group

Combined Control Groups

Combined Experimental Groups

All High Risk (100F) Groups

All Medium Risk (1000) Groups

All Groups (100F and 1000)

High Risk (100F) Control Group

PEARSON CORRELATION COEFFICIENTS

	ENGLIS	GPAS1	GPAS2	DA	WM	SH	TA	EA	SA	SO
ENGLIS	1.0000 (0) S=0.001	0.3527 (31) S=0.026	0.1921 (26) S=0.174	0.0656 (22) S=0.386	0.0930 (22) S=0.340	0.1079 (22) S=0.316	0.1477 (22) S=0.256	0.2752 (22) S=0.108	0.2842 (22) S=0.100	0.2018 (22) S=0.184
GPAS1	0.3527 (31) S=0.026	1.0000 (0) S=0.001	0.5213 (26) S=0.003	0.3954 (22) S=0.034	0.3906 (22) S=0.036	0.4176 (22) S=0.027	0.3451 (22) S=0.058	0.3736 (22) S=0.043	0.4306 (22) S=0.023	0.4156 (22) S=0.027
GPAS2	0.1921 (26) S=0.174	0.5213 (26) S=0.003	1.0000 (0) S=0.001	0.3170 (18) S=0.100	0.1061 (18) S=0.338	0.2292 (18) S=0.180	-0.0580 (18) S=0.410	0.3315 (18) S=0.090	0.1698 (18) S=0.250	0.1798 (18) S=0.238
DA	0.0656 (22) S=0.386	0.3954 (22) S=0.034	0.3170 (18) S=0.100	1.0000 (0) S=0.001	0.5299 (22) S=0.006	0.8867 (22) S=0.001	0.4061 (22) S=0.030	0.6694 (22) S=0.001	0.5527 (22) S=0.004	0.7796 (22) S=0.001
WM	0.0930 (22) S=0.340	0.3906 (22) S=0.036	0.1061 (18) S=0.338	0.5299 (22) S=0.006	1.0000 (0) S=0.001	0.8513 (22) S=0.001	0.8429 (22) S=0.001	0.5137 (22) S=0.007	0.7791 (22) S=0.001	0.8609 (22) S=0.001
SH	0.1079 (22) S=0.316	0.4176 (22) S=0.027	0.2292 (18) S=0.180	0.8867 (22) S=0.001	0.8513 (22) S=0.001	1.0000 (0) S=0.001	0.6949 (22) S=0.001	0.6904 (22) S=0.001	0.7541 (22) S=0.001	0.9437 (22) S=0.001
TA	0.1477 (22) S=0.256	0.3451 (22) S=0.058	-0.0580 (18) S=0.410	0.4061 (22) S=0.030	0.8429 (22) S=0.001	0.6949 (22) S=0.001	1.0000 (0) S=0.001	0.4851 (22) S=0.011	0.8508 (22) S=0.001	0.8199 (22) S=0.001
EA	0.2752 (22) S=0.108	0.3736 (22) S=0.043	0.3315 (18) S=0.090	0.6694 (22) S=0.001	0.5137 (22) S=0.007	0.6904 (22) S=0.001	0.4851 (22) S=0.011	1.0000 (0) S=0.001	0.8485 (22) S=0.001	0.8111 (22) S=0.001
SA	0.2842 (22) S=0.100	0.4306 (22) S=0.023	0.1698 (18) S=0.250	0.5527 (22) S=0.004	0.7791 (22) S=0.001	0.7541 (22) S=0.001	0.8508 (22) S=0.001	0.8485 (22) S=0.001	1.0000 (0) S=0.001	0.9190 (22) S=0.001
SO	0.2018 (22) S=0.184	0.4156 (22) S=0.027	0.1798 (18) S=0.238	0.7796 (22) S=0.001	0.8609 (22) S=0.001	0.9437 (22) S=0.001	0.8199 (22) S=0.001	0.8111 (22) S=0.001	0.9190 (22) S=0.001	1.0000 (0) S=0.001
GPAX1	0.2281 (30) S=0.113	0.0541 (30) S=0.388	0.3489 (25) S=0.044	0.0615 (21) S=0.396	-0.2179 (21) S=0.171	-0.0381 (21) S=0.435	-0.2161 (21) S=0.173	0.2442 (21) S=0.143	0.0145 (21) S=0.475	0.0026 (21) S=0.496

High Risk (100F) Experimental Group

PEARSON CORRELATION COEFFICIENTS

	ENGLIS	GPAS1	GPAS2	DA	MH	SH	TA	EA	SA	SO
ENGLIS	1.0000 (0) S=0.001	0.4781 (32) S=0.003	0.6336 (27) S=0.001	0.5498 (20) S=0.006	0.5076 (20) S=0.011	0.5612 (20) S=0.005	0.0579 (20) S=0.404	0.2590 (20) S=0.135	0.1309 (20) S=0.291	0.3874 (20) S=0.046
GPAS1	0.4781 (32) S=0.003	1.0000 (0) S=0.001	0.6763 (27) S=0.001	0.3436 (20) S=0.069	0.3556 (20) S=0.062	0.3673 (20) S=0.056	-0.2011 (20) S=0.198	0.0821 (20) S=0.365	-0.0876 (20) S=0.357	0.1665 (20) S=0.241
GPAS2	0.6336 (27) S=0.001	0.6763 (27) S=0.001	1.0000 (0) S=0.001	0.3332 (18) S=0.088	0.1103 (18) S=0.332	0.2962 (18) S=0.116	-0.3620 (18) S=0.070	-0.0194 (18) S=0.470	-0.1844 (18) S=0.232	0.0716 (18) S=0.389
DA	0.5498 (20) S=0.006	0.3436 (20) S=0.069	0.3332 (18) S=0.088	1.0000 (0) S=0.001	0.7711 (20) S=0.001	0.9585 (20) S=0.001	0.3482 (20) S=0.066	0.7144 (20) S=0.001	0.5382 (20) S=0.007	0.8149 (20) S=0.001
MH	0.5076 (20) S=0.011	0.3556 (20) S=0.062	0.1103 (18) S=0.332	0.7711 (20) S=0.001	1.0000 (0) S=0.001	0.9057 (20) S=0.001	0.5040 (20) S=0.012	0.7069 (20) S=0.001	0.5671 (20) S=0.005	0.8283 (20) S=0.001
SH	0.5612 (20) S=0.005	0.3673 (20) S=0.056	0.2962 (18) S=0.116	0.9585 (20) S=0.001	0.9057 (20) S=0.001	1.0000 (0) S=0.001	0.4425 (20) S=0.025	0.7636 (20) S=0.001	0.5939 (20) S=0.003	0.8829 (20) S=0.001
TA	0.0579 (20) S=0.404	-0.2011 (20) S=0.198	-0.3620 (18) S=0.070	0.3482 (20) S=0.066	0.5040 (20) S=0.012	0.4425 (20) S=0.025	1.0000 (0) S=0.001	0.7259 (20) S=0.001	0.9094 (20) S=0.001	0.7556 (20) S=0.001
EA	0.2590 (20) S=0.135	0.0821 (20) S=0.365	-0.0194 (18) S=0.470	0.7144 (20) S=0.001	0.7069 (20) S=0.001	0.7636 (20) S=0.001	0.7259 (20) S=0.001	1.0000 (0) S=0.001	0.9199 (20) S=0.001	0.9488 (20) S=0.001
SA	0.1309 (20) S=0.291	-0.0876 (20) S=0.357	-0.1844 (18) S=0.232	0.5382 (20) S=0.007	0.5671 (20) S=0.005	0.5939 (20) S=0.003	0.9094 (20) S=0.001	0.9199 (20) S=0.001	1.0000 (0) S=0.001	0.8931 (20) S=0.001
SO	0.3874 (20) S=0.046	0.1665 (20) S=0.241	0.0716 (18) S=0.389	0.8149 (20) S=0.001	0.8283 (20) S=0.001	0.8829 (20) S=0.001	0.7556 (20) S=0.001	0.9488 (20) S=0.001	0.8931 (20) S=0.001	1.0000 (0) S=0.001
GPAXI	0.2369 (31) S=0.100	0.1926 (31) S=0.150	0.2568 (26) S=0.103	-0.2457 (19) S=0.155	-0.3687 (19) S=0.060	-0.3088 (19) S=0.099	-0.1835 (19) S=0.226	-0.1758 (19) S=0.236	-0.1376 (19) S=0.287	-0.2288 (19) S=0.173

All High Risk (100F) Groups

PEARSON CORRELATION COEFFICIENTS

	ENGLIS	GPAS1	GPAS2	DA	MM	SH	TA	EA	SA	SO
ENGLIS	1.0000 (0) S=0.001	0.3824 (63) S=0.001	0.3429 (53) S=0.006	0.2103 (42) S=0.091	0.1789 (42) S=0.128	0.2284 (42) S=0.073	0.1020 (42) S=0.260	0.2470 (42) S=0.057	0.1965 (42) S=0.106	0.2338 (42) S=0.068
GPAS1	0.3824 (63) S=0.001	1.0000 (0) S=0.001	0.6124 (53) S=0.001	0.3593 (42) S=0.010	0.3050 (42) S=0.025	0.3596 (42) S=0.010	0.0276 (42) S=0.431	0.2012 (42) S=0.101	0.1100 (42) S=0.244	0.2485 (42) S=0.056
GPAS2	0.3429 (53) S=0.006	0.6124 (53) S=0.001	1.0000 (0) S=0.001	0.2840 (36) S=0.047	0.0040 (36) S=0.491	0.1941 (36) S=0.128	-0.1918 (36) S=0.131	0.1169 (36) S=0.249	-0.0408 (36) S=0.407	0.0713 (36) S=0.340
DA	0.2103 (42) S=0.091	0.3593 (42) S=0.010	0.2840 (36) S=0.047	1.0000 (0) S=0.001	0.6168 (42) S=0.001	0.9203 (42) S=0.001	0.3717 (42) S=0.008	0.6909 (42) S=0.001	0.5414 (42) S=0.001	0.7928 (42) S=0.001
MM	0.1789 (42) S=0.128	0.3050 (42) S=0.025	0.0040 (36) S=0.491	0.6168 (42) S=0.001	1.0000 (0) S=0.001	0.8631 (42) S=0.001	0.6517 (42) S=0.001	0.5930 (42) S=0.001	0.6498 (42) S=0.001	0.8350 (42) S=0.001
SH	0.2284 (42) S=0.073	0.3596 (42) S=0.010	0.1941 (36) S=0.128	0.9203 (42) S=0.001	0.8631 (42) S=0.001	1.0000 (0) S=0.001	0.5520 (42) S=0.001	0.7295 (42) S=0.001	0.6603 (42) S=0.001	0.9121 (42) S=0.001
TA	0.1020 (42) S=0.260	0.0276 (42) S=0.431	-0.1918 (36) S=0.131	0.3717 (42) S=0.008	0.6517 (42) S=0.001	0.5520 (42) S=0.001	1.0000 (0) S=0.001	0.6172 (42) S=0.001	0.8858 (42) S=0.001	0.7801 (42) S=0.001
EA	0.2470 (42) S=0.057	0.2012 (42) S=0.101	0.1169 (36) S=0.249	0.6909 (42) S=0.001	0.5930 (42) S=0.001	0.7295 (42) S=0.001	0.6172 (42) S=0.001	1.0000 (0) S=0.001	0.8841 (42) S=0.001	0.8829 (42) S=0.001
SA	0.1965 (42) S=0.106	0.1100 (42) S=0.244	-0.0408 (36) S=0.407	0.5414 (42) S=0.001	0.6498 (42) S=0.001	0.6603 (42) S=0.001	0.8858 (42) S=0.001	0.8841 (42) S=0.001	1.0000 (0) S=0.001	0.9002 (42) S=0.001
SO	0.2338 (42) S=0.068	0.2485 (42) S=0.056	0.0713 (36) S=0.340	0.7928 (42) S=0.001	0.8350 (42) S=0.001	0.9121 (42) S=0.001	0.7801 (42) S=0.001	0.8829 (42) S=0.001	0.9002 (42) S=0.001	1.0000 (0) S=0.001
GPAX1	0.2609 (61) S=0.021	0.1245 (61) S=0.170	0.2824 (51) S=0.022	-0.0682 (40) S=0.338	-0.2252 (40) S=0.081	-0.1247 (40) S=0.222	-0.1672 (40) S=0.124	0.0721 (40) S=0.329	-0.0458 (40) S=0.389	-0.0732 (40) S=0.327

Medium Risk (1000) Control Group

PEARSON CORRELATION COEFFICIENTS

	ENGLIS	GPAS1	GPAS2	DA	HM	SH	TA	EA	SA	SO
ENGLIS	1.0000 (0) S=0.001	0.4175 (60) S=0.001	0.2859 (57) S=0.016	-0.0499 (45) S=0.373	0.3072 (45) S=0.020	0.1154 (45) S=0.225	0.2854 (45) S=0.029	0.0123 (45) S=0.468	0.1564 (45) S=0.153	0.1415 (45) S=0.177
GPAS1	0.4175 (60) S=0.001	1.0000 (0) S=0.001	0.4459 (57) S=0.001	0.1558 (45) S=0.153	0.2499 (45) S=0.049	0.2175 (45) S=0.076	0.4132 (45) S=0.002	0.3038 (45) S=0.021	0.3823 (45) S=0.005	0.3155 (45) S=0.017
GPAS2	0.2859 (57) S=0.016	0.4459 (57) S=0.001	1.0000 (0) S=0.001	0.2737 (43) S=0.038	0.3567 (43) S=0.009	0.3468 (43) S=0.011	0.1479 (43) S=0.172	0.2063 (43) S=0.092	0.1956 (43) S=0.104	0.3138 (43) S=0.020
DA	-0.0499 (45) S=0.373	0.1558 (45) S=0.153	0.2737 (43) S=0.038	1.0000 (0) S=0.001	0.6539 (45) S=0.001	0.9193 (45) S=0.001	0.3481 (45) S=0.010	0.5277 (45) S=0.001	0.4873 (45) S=0.001	0.8254 (45) S=0.001
HM	0.3072 (45) S=0.020	0.2499 (45) S=0.049	0.3567 (43) S=0.009	0.6539 (45) S=0.001	1.0000 (0) S=0.001	0.8891 (45) S=0.001	0.5933 (45) S=0.001	0.5637 (45) S=0.001	0.6336 (45) S=0.001	0.8542 (45) S=0.001
SH	0.1154 (45) S=0.225	0.2175 (45) S=0.076	0.3468 (43) S=0.011	0.9193 (45) S=0.001	0.8891 (45) S=0.001	1.0000 (0) S=0.001	0.4913 (45) S=0.001	0.6007 (45) S=0.001	0.6044 (45) S=0.001	0.9247 (45) S=0.001
TA	0.2854 (45) S=0.029	0.4132 (45) S=0.002	0.1479 (43) S=0.172	0.3481 (45) S=0.010	0.5933 (45) S=0.001	0.4913 (45) S=0.001	1.0000 (0) S=0.001	0.5936 (45) S=0.001	0.8869 (45) S=0.001	0.7250 (45) S=0.001
EA	0.0123 (45) S=0.468	0.3038 (45) S=0.021	0.2063 (43) S=0.092	0.5277 (45) S=0.001	0.5637 (45) S=0.001	0.6007 (45) S=0.001	0.5936 (45) S=0.001	1.0000 (0) S=0.001	0.8866 (45) S=0.001	0.7790 (45) S=0.001
SA	0.1564 (45) S=0.153	0.3823 (45) S=0.005	0.1956 (43) S=0.104	0.4873 (45) S=0.001	0.6336 (45) S=0.001	0.6044 (45) S=0.001	0.8869 (45) S=0.001	0.8866 (45) S=0.001	1.0000 (0) S=0.001	0.8441 (45) S=0.001
SO	0.1415 (45) S=0.177	0.3155 (45) S=0.017	0.3138 (43) S=0.020	0.8254 (45) S=0.001	0.8542 (45) S=0.001	0.9247 (45) S=0.001	0.7250 (45) S=0.001	0.7790 (45) S=0.001	0.8441 (45) S=0.001	1.0000 (0) S=0.001
GPAXR	0.0829 (57) S=0.270	0.2614 (57) S=0.025	0.6520 (54) S=0.001	0.2138 (43) S=0.084	0.3075 (43) S=0.022	0.2875 (43) S=0.031	0.0375 (43) S=0.406	0.1551 (43) S=0.160	0.1260 (43) S=0.210	0.2306 (43) S=0.068

Medium Risk (1000) Experimental Group

PEARSON CORRELATION COEFFICIENTS

	ENGLIS	GPAS1	GPAS2	OA	NM	SH	TA	EA	BA	SO
ENGLIS	1.0000 (0) S=0.001	0.6171 (57) S=0.001	0.3115 (53) S=0.012	0.0706 (44) S=0.324	0.1896 (44) S=0.109	0.1449 (44) S=0.174	0.1393 (44) S=0.184	0.2930 (44) S=0.027	0.2189 (44) S=0.077	0.1857 (44) S=0.114
GPAS1	0.6171 (57) S=0.001	1.0000 (0) S=0.001	0.5144 (53) S=0.001	0.0481 (44) S=0.378	0.3186 (44) S=0.018	0.2057 (44) S=0.090	0.2332 (44) S=0.064	0.2769 (44) S=0.034	0.2644 (44) S=0.041	0.2756 (44) S=0.035
GPAS2	0.3115 (53) S=0.012	0.5144 (53) S=0.001	1.0000 (0) S=0.001	0.1620 (42) S=0.153	0.2135 (42) S=0.087	0.2086 (42) S=0.092	0.1228 (42) S=0.219	0.1552 (42) S=0.163	0.1249 (42) S=0.215	0.1998 (42) S=0.102
OA	0.0706 (44) S=0.324	0.0481 (44) S=0.378	0.1620 (42) S=0.153	1.0000 (0) S=0.001	0.5000 (44) S=0.001	0.8565 (44) S=0.001	0.1216 (44) S=0.216	0.3814 (44) S=0.005	0.2541 (44) S=0.048	0.7236 (44) S=0.001
NM	0.1896 (44) S=0.109	0.3186 (44) S=0.018	0.2135 (42) S=0.087	0.5000 (44) S=0.001	1.0000 (0) S=0.001	0.8690 (44) S=0.001	0.3142 (44) S=0.019	0.3751 (44) S=0.006	0.3703 (44) S=0.007	0.7933 (44) S=0.001
SH	0.1449 (44) S=0.174	0.2057 (44) S=0.090	0.2086 (42) S=0.092	0.8565 (44) S=0.001	0.8690 (44) S=0.001	1.0000 (0) S=0.001	0.2651 (44) S=0.041	0.4473 (44) S=0.001	0.3749 (44) S=0.006	0.8806 (44) S=0.001
TA	0.1393 (44) S=0.184	0.2332 (44) S=0.064	0.1228 (42) S=0.219	0.1216 (44) S=0.216	0.3142 (44) S=0.019	0.2651 (44) S=0.041	1.0000 (0) S=0.001	0.5327 (44) S=0.001	0.8787 (44) S=0.001	0.5918 (44) S=0.001
EA	0.2930 (44) S=0.027	0.2769 (44) S=0.034	0.1552 (42) S=0.163	0.3814 (44) S=0.005	0.3751 (44) S=0.006	0.4473 (44) S=0.001	0.5327 (44) S=0.001	1.0000 (0) S=0.001	0.8556 (44) S=0.001	0.7315 (44) S=0.001
BA	0.2189 (44) S=0.077	0.2644 (44) S=0.041	0.1249 (42) S=0.215	0.2541 (44) S=0.048	0.3703 (44) S=0.007	0.3749 (44) S=0.006	0.8787 (44) S=0.001	0.8556 (44) S=0.001	1.0000 (0) S=0.001	0.7301 (44) S=0.001
SO	0.1857 (44) S=0.114	0.2756 (44) S=0.035	0.1998 (42) S=0.102	0.7236 (44) S=0.001	0.7933 (44) S=0.001	0.8806 (44) S=0.001	0.5918 (44) S=0.001	0.7315 (44) S=0.001	0.7301 (44) S=0.001	1.0000 (0) S=0.001
GPAX1	0.0496 (53) S=0.362	0.3965 (53) S=0.002	0.2468 (50) S=0.042	0.1567 (40) S=0.167	0.1139 (40) S=0.242	0.1695 (40) S=0.148	0.0433 (40) S=0.395	0.2473 (40) S=0.062	0.1168 (40) S=0.236	0.1940 (40) S=0.115

All Medium Risk (1000) Groups

PEARSON CORRELATION COEFFICIENTS

	ENGLIS	GPAS1	GPAS2	DA	MM	SM	TA	EA	SA	SD
ENGLIS	1.0000 (0) S=0.001	0.5320 (117) S=0.001	0.2760 (110) S=0.002	0.0101 (89) S=0.463	0.2215 (89) S=0.018	0.1190 (89) S=0.133	0.2036 (89) S=0.028	0.1604 (89) S=0.067	0.1874 (89) S=0.039	0.1568 (89) S=0.071
GPAS1	0.5320 (117) S=0.001	1.0000 (0) S=0.001	0.4657 (110) S=0.001	0.1073 (89) S=0.158	0.2808 (89) S=0.004	0.2111 (89) S=0.024	0.3306 (89) S=0.001	0.2918 (89) S=0.003	0.3303 (89) S=0.001	0.2978 (89) S=0.002
GPAS2	0.2760 (110) S=0.002	0.4657 (110) S=0.001	1.0000 (0) S=0.001	0.2275 (85) S=0.018	0.2903 (85) S=0.004	0.2882 (85) S=0.004	0.1349 (85) S=0.109	0.1863 (85) S=0.044	0.1666 (85) S=0.064	0.2688 (85) S=0.006
DA	0.0101 (89) S=0.463	0.1073 (89) S=0.158	0.2275 (85) S=0.018	1.0000 (0) S=0.001	0.5840 (89) S=0.001	0.6921 (89) S=0.001	0.2332 (89) S=0.014	0.4647 (89) S=0.001	0.3780 (89) S=0.001	0.7803 (89) S=0.001
MM	0.2215 (89) S=0.018	0.2808 (89) S=0.004	0.2903 (85) S=0.004	0.5840 (89) S=0.001	1.0000 (0) S=0.001	0.8797 (89) S=0.001	0.4386 (89) S=0.001	0.4737 (89) S=0.001	0.4968 (89) S=0.001	0.8204 (89) S=0.001
SM	0.1190 (89) S=0.133	0.2111 (89) S=0.024	0.2882 (85) S=0.004	0.6921 (89) S=0.001	0.8797 (89) S=0.001	1.0000 (0) S=0.001	0.3714 (89) S=0.001	0.5327 (89) S=0.001	0.4924 (89) S=0.001	0.9026 (89) S=0.001
TA	0.2036 (89) S=0.028	0.3306 (89) S=0.001	0.1349 (85) S=0.109	0.2332 (89) S=0.014	0.4386 (89) S=0.001	0.3714 (89) S=0.001	1.0000 (0) S=0.001	0.5589 (89) S=0.001	0.8826 (89) S=0.001	0.6579 (89) S=0.001
EA	0.1604 (89) S=0.067	0.2918 (89) S=0.003	0.1863 (85) S=0.044	0.4647 (89) S=0.001	0.4737 (89) S=0.001	0.5327 (89) S=0.001	0.5589 (89) S=0.001	1.0000 (0) S=0.001	0.8690 (89) S=0.001	0.7591 (89) S=0.001
SA	0.1874 (89) S=0.039	0.3303 (89) S=0.001	0.1666 (85) S=0.064	0.3780 (89) S=0.001	0.4968 (89) S=0.001	0.4924 (89) S=0.001	0.8826 (89) S=0.001	0.8690 (89) S=0.001	1.0000 (0) S=0.001	0.7918 (89) S=0.001
SD	0.1568 (89) S=0.071	0.2978 (89) S=0.002	0.2688 (85) S=0.006	0.7803 (89) S=0.001	0.8204 (89) S=0.001	0.9026 (89) S=0.001	0.6579 (89) S=0.001	0.7591 (89) S=0.001	0.7918 (89) S=0.001	1.0000 (0) S=0.001
GPAX1	0.0680 (110) S=0.240	0.3272 (110) S=0.001	0.5019 (104) S=0.001	0.1823 (83) S=0.050	0.2031 (83) S=0.033	0.2251 (83) S=0.020	0.0470 (83) S=0.336	0.1923 (83) S=0.041	0.1269 (83) S=0.126	0.2120 (83) S=0.027

Combined Control Groups

PEARSON CORRELATION COEFFICIENTS

	ENGLIS	GPAS1	GPAS2	OA	NM	SM	TA	EA	SA	SQ
ENGLIS	1.0000	0.3644	0.2204	0.0068	0.1893	0.1026	0.2209	0.1503	0.2108	0.1658
	(0)	(91)	(83)	(67)	(67)	(67)	(67)	(67)	(67)	(67)
	S=0.001	S=0.001	S=0.023	S=0.478	S=0.062	S=0.204	S=0.036	S=0.112	S=0.043	S=0.090
GPAS1	0.3644	1.0000	0.5223	0.2024	0.2973	0.2599	0.4385	0.3244	0.4173	0.3522
	(91)	(0)	(83)	(67)	(67)	(67)	(67)	(67)	(67)	(67)
	S=0.001	S=0.001	S=0.001	S=0.050	S=0.007	S=0.017	S=0.001	S=0.004	S=0.001	S=0.002
GPAS2	0.2204	0.5223	1.0000	0.2463	0.2877	0.2695	0.1674	0.2269	0.2218	0.2884
	(83)	(83)	(0)	(61)	(61)	(61)	(61)	(61)	(61)	(61)
	S=0.023	S=0.001	S=0.001	S=0.028	S=0.012	S=0.012	S=0.099	S=0.039	S=0.043	S=0.012
OA	0.0068	0.2024	0.2463	1.0000	0.6166	0.9098	0.3535	0.5686	0.4973	0.6082
	(67)	(67)	(61)	(0)	(67)	(67)	(67)	(67)	(67)	(67)
	S=0.478	S=0.050	S=0.028	S=0.001	S=0.001	S=0.001	S=0.002	S=0.001	S=0.001	S=0.001
NM	0.1893	0.2973	0.2877	0.6166	1.0000	0.8776	0.6572	0.5502	0.6731	0.6569
	(67)	(67)	(61)	(67)	(0)	(67)	(67)	(67)	(67)	(67)
	S=0.062	S=0.007	S=0.012	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001
SM	0.1026	0.2599	0.2695	0.9098	0.8776	1.0000	0.5356	0.6263	0.6385	0.9274
	(67)	(67)	(61)	(67)	(67)	(0)	(67)	(67)	(67)	(67)
	S=0.204	S=0.017	S=0.012	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001
TA	0.2209	0.4385	0.1674	0.3535	0.6572	0.5356	1.0000	0.5607	0.8805	0.7489
	(67)	(67)	(61)	(67)	(67)	(67)	(0)	(67)	(67)	(67)
	S=0.036	S=0.001	S=0.099	S=0.002	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001
EA	0.1503	0.3244	0.2269	0.5686	0.5502	0.6263	0.5607	1.0000	0.8696	0.7871
	(67)	(67)	(61)	(67)	(67)	(67)	(67)	(0)	(67)	(67)
	S=0.112	S=0.004	S=0.039	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001
SA	0.2108	0.4173	0.2218	0.4973	0.6731	0.6385	0.8805	0.8696	1.0000	0.8635
	(67)	(67)	(61)	(67)	(67)	(67)	(67)	(67)	(0)	(67)
	S=0.043	S=0.001	S=0.043	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001
SQ	0.1658	0.3522	0.2884	0.6082	0.6569	0.9274	0.7489	0.7871	0.8635	1.0000
	(67)	(67)	(61)	(67)	(67)	(67)	(67)	(67)	(67)	(0)
	S=0.090	S=0.002	S=0.012	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001
GPAX1	0.1060	0.3605	0.6482	0.1490	0.1792	0.1657	0.0846	0.1773	0.1518	0.1910
	(87)	(87)	(79)	(64)	(64)	(64)	(64)	(64)	(64)	(64)
	S=0.164	S=0.001	S=0.001	S=0.120	S=0.078	S=0.071	S=0.253	S=0.080	S=0.116	S=0.065

Combined Experimental Groups

PEARSON CORRELATION COEFFICIENTS

	ENGLIS	GPAS1	GPAS2	DA	WM	SM	TA	EA	SA	SO
ENGLIS	1,0000	0,3581	0,4335	0,2083	0,2568	0,2571	0,1215	0,2814	0,1935	0,2447
	(0)	(89)	(80)	(64)	(64)	(64)	(64)	(64)	(64)	(64)
	S=0,001	S=0,001	S=0,001	S=0,049	S=0,020	S=0,020	S=0,169	S=0,012	S=0,063	S=0,026
GPAS1	0,3581	1,0000	0,6313	0,1757	0,3781	0,3001	0,1014	0,2323	0,1570	0,2809
	(89)	(0)	(80)	(64)	(64)	(64)	(64)	(64)	(64)	(64)
	S=0,001	S=0,001	S=0,001	S=0,082	S=0,001	S=0,008	S=0,213	S=0,032	S=0,108	S=0,012
GPAS2	0,4335	0,6313	1,0000	0,2222	0,2297	0,2564	-0,0120	0,1131	0,0376	0,1871
	(80)	(80)	(0)	(60)	(60)	(60)	(60)	(60)	(60)	(60)
	S=0,001	S=0,001	S=0,001	S=0,044	S=0,039	S=0,024	S=0,464	S=0,195	S=0,388	S=0,076
DA	0,2083	0,1757	0,2222	1,0000	0,5513	0,8846	0,2167	0,5209	0,3781	0,7525
	(64)	(64)	(60)	(0)	(64)	(64)	(64)	(64)	(64)	(64)
	S=0,049	S=0,082	S=0,044	S=0,001	S=0,001	S=0,001	S=0,043	S=0,001	S=0,001	S=0,001
WM	0,2568	0,3781	0,2297	0,5513	1,0000	0,8681	0,3773	0,4792	0,4370	0,8002
	(64)	(64)	(60)	(64)	(0)	(64)	(64)	(64)	(64)	(64)
	S=0,020	S=0,001	S=0,039	S=0,001	S=0,001	S=0,001	S=0,001	S=0,001	S=0,001	S=0,001
SM	0,2571	0,3001	0,2564	0,8846	0,8681	1,0000	0,3440	0,5764	0,4720	0,8868
	(64)	(64)	(60)	(64)	(64)	(0)	(64)	(64)	(64)	(64)
	S=0,020	S=0,008	S=0,024	S=0,001	S=0,001	S=0,001	S=0,003	S=0,001	S=0,001	S=0,001
TA	0,1215	0,1014	-0,0120	0,2167	0,3773	0,3440	1,0000	0,6159	0,8913	0,6581
	(64)	(64)	(60)	(64)	(64)	(64)	(0)	(64)	(64)	(64)
	S=0,169	S=0,213	S=0,464	S=0,043	S=0,001	S=0,003	S=0,001	S=0,001	S=0,001	S=0,001
EA	0,2814	0,2323	0,1131	0,5209	0,4792	0,5764	0,6159	1,0000	0,8856	0,8190
	(64)	(64)	(60)	(64)	(64)	(64)	(64)	(0)	(64)	(64)
	S=0,012	S=0,032	S=0,195	S=0,001	S=0,001	S=0,001	S=0,001	S=0,001	S=0,001	S=0,001
SA	0,1935	0,1570	0,0376	0,3781	0,4370	0,4720	0,8913	0,8856	1,0000	0,7970
	(64)	(64)	(60)	(64)	(64)	(64)	(64)	(64)	(0)	(64)
	S=0,063	S=0,108	S=0,388	S=0,001	S=0,001	S=0,001	S=0,001	S=0,001	S=0,001	S=0,001
SO	0,2447	0,2809	0,1871	0,7525	0,8002	0,8868	0,6581	0,8190	0,7970	1,0000
	(64)	(64)	(60)	(64)	(64)	(64)	(64)	(64)	(64)	(0)
	S=0,026	S=0,012	S=0,076	S=0,001	S=0,001	S=0,001	S=0,001	S=0,001	S=0,001	S=0,001
GPAX1	0,1365	0,4705	0,3867	0,1094	0,2523	0,2027	0,0572	0,1729	0,1063	0,2186
	(84)	(84)	(76)	(59)	(59)	(59)	(59)	(59)	(59)	(59)
	S=0,108	S=0,001	S=0,001	S=0,205	S=0,027	S=0,062	S=0,334	S=0,095	S=0,211	S=0,048

All Groups (100F and 1000)

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	ENGLIS	GPAS1	GPAS2	DA	MM	SM	TA	EA	SA	SO
ENGLIS	1.0000 (0) S=0.001	0.4623 (180) S=0.001	0.3074 (163) S=0.001	0.0962 (131) S=0.137	0.2190 (131) S=0.006	0.1708 (131) S=0.026	0.1771 (131) S=0.022	0.2078 (131) S=0.009	0.2033 (131) S=0.010	0.2006 (131) S=0.011
GPAS1	0.4623 (180) S=0.001	1.0000 (0) S=0.001	0.5664 (163) S=0.001	0.1942 (131) S=0.013	0.3367 (131) S=0.001	0.2814 (131) S=0.001	0.2741 (131) S=0.001	0.2818 (131) S=0.001	0.2900 (131) S=0.001	0.3181 (131) S=0.001
GPAS2	0.3074 (163) S=0.001	0.5664 (163) S=0.001	1.0000 (0) S=0.001	0.2393 (121) S=0.004	0.2637 (121) S=0.002	0.2781 (121) S=0.001	0.0826 (121) S=0.184	0.1781 (121) S=0.025	0.1362 (121) S=0.068	0.2439 (121) S=0.004
DA	0.0962 (131) S=0.137	0.1942 (131) S=0.013	0.2393 (121) S=0.004	1.0000 (0) S=0.001	0.5840 (131) S=0.001	0.6977 (131) S=0.001	0.2793 (131) S=0.001	0.5445 (131) S=0.001	0.4330 (131) S=0.001	0.7789 (131) S=0.001
MM	0.2190 (131) S=0.006	0.3367 (131) S=0.001	0.2637 (121) S=0.002	0.5840 (131) S=0.001	1.0000 (0) S=0.001	0.8725 (131) S=0.001	0.5131 (131) S=0.001	0.5146 (131) S=0.001	0.5518 (131) S=0.001	0.8276 (131) S=0.001
SM	0.1708 (131) S=0.026	0.2814 (131) S=0.001	0.2781 (121) S=0.001	0.6977 (131) S=0.001	0.8725 (131) S=0.001	1.0000 (0) S=0.001	0.4362 (131) S=0.001	0.6017 (131) S=0.001	0.5525 (131) S=0.001	0.9042 (131) S=0.001
TA	0.1771 (131) S=0.022	0.2741 (131) S=0.001	0.0826 (121) S=0.184	0.2793 (131) S=0.001	0.5131 (131) S=0.001	0.4362 (131) S=0.001	1.0000 (0) S=0.001	0.5842 (131) S=0.001	0.8860 (131) S=0.001	0.7036 (131) S=0.001
EA	0.2078 (131) S=0.009	0.2818 (131) S=0.001	0.1781 (121) S=0.025	0.5445 (131) S=0.001	0.5146 (131) S=0.001	0.6017 (131) S=0.001	0.5842 (131) S=0.001	1.0000 (0) S=0.001	0.8752 (131) S=0.001	0.8020 (131) S=0.001
SA	0.2033 (131) S=0.010	0.2900 (131) S=0.001	0.1362 (121) S=0.068	0.4330 (131) S=0.001	0.5518 (131) S=0.001	0.5525 (131) S=0.001	0.8860 (131) S=0.001	0.8752 (131) S=0.001	1.0000 (0) S=0.001	0.8305 (131) S=0.001
SO	0.2006 (131) S=0.011	0.3181 (131) S=0.001	0.2439 (121) S=0.004	0.7789 (131) S=0.001	0.8276 (131) S=0.001	0.9062 (131) S=0.001	0.7036 (131) S=0.001	0.8020 (131) S=0.001	0.8305 (131) S=0.001	1.0000 (0) S=0.001
GPAX1	0.1326 (171) S=0.042	0.4173 (171) S=0.001	0.5536 (155) S=0.001	0.1270 (123) S=0.081	0.2105 (123) S=0.010	0.1901 (123) S=0.018	0.0772 (123) S=0.198	0.1773 (123) S=0.025	0.1358 (123) S=0.067	0.2045 (123) S=0.012

APPENDIX C

Description of Study Skills Program

The series consisted of ten 30 minute filmed units. A brief description of each unit follows,

1) Perspectives on Learning - An introductory unit, which outlined some of the phylogenetic components of learning and some of the environmental influences on learning. The unit also presented some findings of research on learning and outlined the units to follow.

2) Scheduling Your Time - Examined systematic and unsystematic approaches to learning situations. A model schedule was presented and completed covering the usual student activities for one week.

3) The Study Environment - Examined conditions under which study can be considered to be effective and ineffective. The unit examined study environment factors which can effect learning, and offered specific examples of "Good" and "Bad" study environments.

4) Learning Strategies - Related specific strategies that were considered to be related to a high probability of success. Included were notes on attendance, class seating position, notetaking, filing of notes, etc.

5) Learning: An Active Process - Stressed the differences between active and passive approaches to learning and study. The unit stressed the acquisition and development of an active approach. Typical classroom and study situations were examined.

6) Learning and Reinforcement - Examined some of the finding of learning research. This unit introduced the effects of reinforcement on learning and outlined applications of the principles of reinforcement on study and learning.

7) Classroom Learning - Developed strategies for taking notes in formal lectures, discussions, laboratories and field experiences. Introduced the topic of preparation for class, and attentive listening and questioning in class.

8) Improving Your Reading Skill - Discriminated between forms of light reading, designed for entertainment, and reading for learning. Developed the concept of pacing in reading to the task at hand and examined the characteristics of efficient reading.

9) How to Take Examinations - Introduced the idea of an examination as a learning experience. This unit examined the assumptions underlying certain types of examinations and developed specific strategies for the various types, or "Test Sophistication".

10) Where and When to Seek Counsel - Introduced the educational significance of the student's personal adjustment to his academic and social environment. Specific emphasis was placed on how to recognize difficulties and where to seek assistance.